All

BOOKS

MCQs

Pharmacy technician

BY UNIVERSAL INSTITUTE OF ASIA CONTENTS

COMPLETE REVIEW

OF

- *PHARMACEUTICS*
- *PHRMACOGNOSY*
- *MICROBIOLOGY*
- *BIO-CHEMISTRY*

ANATOMY & PHYSIOLOGY

03421009865

1. In word anatomy “ana” means

a) Down b) up c)cutting

2.Study of strutcher is called

a) Anatomy b) physiology c) histology

3.Histology means study of strutcher of

a)cell b)tissue c)organ

4.congenital deformation study in

a)histology b)gross anatomy c)embryology

5.regional anatomy deals with study of

a)organ b)specific region c)both

6.in which branch of anatomy cell study

a) Histology b)embryology c)cytology

7.Ventral mean part of body present in

a)front b)backward c)around body

8.dorsal synonym is near to

a)back b) front c)side wise

9.inferior is toward _____ side

a)upper b)lower c)downward

10.the part of body near medial line is

a)frontal b)dorsal c) medial

11.lateral mean part of body _____ medial line

a)toward b)away c) both

12.area mean surface

a)superficial b)proximal c)deep

13.part of body away from reference point

a)proximal b)distal c)deep

14.left arm and left leg are

a)ipsilateral b)contralateral c)infromedial

15.movement of bone when angle b/w them decrease is called

a)extension b)flexin c)both

16.movement toward medial line

a)abduction b)adduction c)pronation

17.supination is movement of

a)leg b)arm c)fore arm

18.eversion is movement of _____ away from med line .

a)leg b)sole of foot c)fingers

19.depression is movement of ---------- toward lower side.

A)bones b)muscles c)both

20.If distance b/w leg and feet decrease

a)planter flexin b)dorsiflexin c)both

21.surface anatomy is part of diagnosis.

a)physical b)anatomical c)both

22.frontal bone present on skull

a)front b)backside c)sidewise

23.fore arm start from scapula ended to .

a)radius b)ulna c)elbow

24.arm having two part

a)radius b)ulna c)both

25.upper portion of upper limb is .

a)leg b)thigh c)patella

26.patella is also called

a)torsal b)meta torsal c)knee cap

27.no.of phallanges are

a)7 b)5 c)14

28.total no of irregular bones in vertebral column .

a)32 b)34 c)33

29.coccyx having bones .

a)5 b)4 c)7

30.cervical haaving ---------- vertebra.

a)7 b)11 c)14

31.coxal bone also called

a)ischium b)ileum c)ossobone

32.in back two bones are connect to form

a)pubis b)ileum c)sacrum

33.in men ileum chest is

a)delicate b)hard c)compact

34in women ileum is

a)soft b)delicated c)compact

35.pharynx length is

a)4-7 inch b)5-6 inch c)7-9 inch

36.diameter of esophagus

a)2cm b)6cm c)4cm

37.esophagus end in

a)intestine b)stomach c)rectum

38.length of stomach is

a)7inch b)10inch c)12inch

39.ileum size is

a)2-4 cm b)4-7 cm c)10-11 inches

40.finger like projection in small intestine

a)microvilli b)villi c)both

41.large intestine length is

a)6cm b)1.5m c)2m

42.sigmoid colon is part of

a)small intestine b) large intestine c)stomach

43.store and expel of feces is function of

a)small intestine b)large intestine c) rectum

44.opening for elimination of feces is function of

a)anus b)rectum c)stomach

45.function of trypsin and chymotrypsin is digestion of

a)fats b)protein c) carbohydrates

46.amylase digest

a)monosaccharides b)polysaccharides c)disaccharides

47.function of large intestine is reabsorption of

a)fats b)oils c)minerals

48.storage of concentrated bile is function of

a)gallbladder b)ballstone c)liver

49.liver destroy the old

a)stomac cell b)blood cell c) intestinal cells

50.parynx is part of

a)GIT system b)respiratory system c)urinary system

51.pharynx synonym is

a)mouth b) throat c) lungs

52.larynx is part of ---------- respiratory tract

a)upper b)lower c) both

53.large cartilage in larynx is

a)thyroid b)epiglottis c)windpipe

54.trachea synonym is

a)voice box b)windpipe c)both

55.vocal card lies inside

a)pharynx b)larynx c)both

56.trachea length is

a)5cm b)10cm c)10m

57.bifurcation of trachea at level of vertebra

a)4^{th} b)5^{th} c)6^{th}

58.bronchioles are divided into

a)alveoli b)bronchi c)trachea

59.alveoli having close contact with

a)arteries b)veins c)capillaries

60.the prominent part of windpipe is

a)pharynx b)larynx c)bronchi

61.function of urinary system is to form

a)feces b)urine c)both

62.nephron is basic strutchral unit of

a)respiratory system b)urinary system c)nervous system

63.kidney is present in on _____- to abdominal part

a)inferior b)posterior c)peripheral

64.kidney is located mainly in _____ region .

a)lmbar b)thoracic c) cervical

65.outer zone of kidney is

a)medulla b) cortex c) both

66.pyramid contain collection of tubes

a)straight b)curved c)helical

67.both kidney contain nephrons

a)2.4million b)1.2 million c)1.2 billion

68.convey urine from kidney to bladder through

a)ureter b)urinary bladder c)urethra

69.bladder function is to ---------- of urine .

a) Reservoir b) released c) both

70.Urethra involve in discharge of urine from

A) urethra b) bladder c) ureter

heart size in men

a) 370g b)300g c) 250g

It inclined toward ----------side .

a)left b)right c)above

myocardium is layer

a)upper b) middle c)lower

tricuspid valve b/w right atrium and

a) Left atrium b) right atrium c) right ventricle

Pulmonic valve b/w right ventricle and pulmonary ----------.

A)artery b)vein c) capillaries

Aortic valve b/w left ventricle and

a)aorta b) artery c) superior venacava

largest artery in human body .

a) Aorta b) artery c)both

Arterioles is subdivision of

a) Arteries b) vein c) capillaries

Connect capillaries to veins called

a) Venules b) capillaries c) arteries

Deoxygenated blood toward the heart carry by

a) Veins b) arteries c) aorta

Urethra conduct urine and

a)semen b)serum c)feces

2 robes surrounded the urethra

A)pancreatic gland b) prostate gland c)bladder

Highly coiled tubes that store spermatozoa.

a)scrotum b)epididymis c) testes

male organ where spermatozoa form male sex hormones.

a)scrotum b)testes c)serum

a thin external sac of skin that divided into 2 compartment

a)testes b)scrotum c) seminal vesicles

female reproductive system having organ except .

a)testes b) vagina c)clitoris

thin piece of skin that surround over vaginal opening in female.

a)hymen b)uterus c)anal canal

weight of ovaries is

a)9-13 g b) 4-8 g c) 7-10 g

size of ovaries is

a) 2-4 cm b)3-8 cm c)variable

Uteus is present b/w rectum and

a) Vagina b)urinary bladder c) anus

Tube connect ovaries with uterus is called

a) Uterine b) fallopian c) both

Branch of biology deals with study of function called

a)anatomy b)physiology c)histology

in word physiology “physis’ means

a)body b)function c)nature

in cell composition water concentration is

a)65-80% b)65-90% c)70-68%

cell membrane thickness is

a)7-13nm b)4-12nm c)8-10nm

function of cell membrane is passage of substances

a) water soluble b)Fat soluble C)BOTH

some carbohydrate in plasma are helpful in binding hormones like

a)progesterone b)insulin c) testosterone

granular strutcher is endoplasmic reticulum is

a)rough ER b)smooth ER c)both

cell contain many tiny granules strutcher called

a)ribosomes b)rough ER C) cytosol

free floating ribosome produce

a)carbohydrate b)protein c)fats

formation of RNA from DNA is called

a)transcription b)translation c) both

to modified N- oligosaccharides is function of

a)mitochondria b)Golgi apparatus c) ribosomes

width of mitochondrial strutcher is

a)0.5-1um b)1-1.5um c)2-2.7um

in dry wt of nucleus DNA IS

a)20% b)18% c)2%

tissue cause protection of underlying strutcher

a)epithelial b)musle c)connective

single layer epithelial tissue are

a)simple b)stratified c)both

bones cells are rigid because it has impregnated with

a)phosphate b) acid c) carbohydrates

end of long bone is called

a) diaphysis b)epiphysis c) both

example of long bones is

a)tibia b)femur c)both

bone matrix layer or lamella thickness

a) 3-7um b)7-9um c)9-11um

Haematopoisis is formation of

A)BONE b)blood c)tissues

Joint in skull is

a) Fixed b)moveable c)slightly moveable

Hip and shoulder joint are

a)ball & socket joint b) synovial joint c) cavitated joint

b/w tarsal and meta tasal joint present

A)HINGE B)pivot c)gliding

In wrist joint present

a)condyloid b)saddle c) both

one way system in body

a) Urinary b) cvs c) lymphatic

Lymph having water concentration is

a)70% b) 96% c) 98%

lymph is fluid

a)hypertonic b)hypotonic c)isotonic

lacteal present in

a) Small intestine b) villi& microvilli c) epithelial tissues in intestine

For final maturation of lymphocyte occur in

a)spleen b)liver c)lymph node

cellular part in blood is

a)43% b) 45% c) 50%

fibrinogen concentration in blood

a)3% b)0.2% c)0.1%

non nitrogenous part of blood is

a) Urea b)galactose c)creatinine

Blood pigment is

a) Albumin b) triglycerides c)bilirubin

Life span of platelets is

a)20days b)45days c)5-9days

colour of platelets is

a)red b)brown c)purple

nucleated blood cell is

a)erythrocyte b)leukocyte c) platelets

origin of platelets is

a)liver b)spleen c) megakaryocyte

soluble protein in blood is

a)8% b)7% c)10%

in female volume of blood is

a)4.5liter b)5liter c)5.5liter

blood PH is

a)6.8 b)7.2 c)7.4

in infant RBCs count is

a)5.4million/cumm b)4.7million/cumm c)6.0million/cumm

haemoglobin percentage in blood is

a)45% b)33% c)98%

in neonates life span of RBCs is

a) 80-99days b)70-90days c)60-89%

In 2nd trimester production of RBCs is done in

A)SPLEEN b)lymph node c)both

All bone produce RBCs upto age of

a)7yr b)5yrs c)10yrs

essential vitamin for DNA synthesis

a)vit.B12 b)vit B6 C)vit .B9

erythropoietin cause to release RBCs from

a)lymph b)redbone marrow c)vertebra

in RBCs 5% variation occur in

a)7hr b) 14hr c)24hr

RBCs count increase in

A) TEMPRATURE b)high altitude c)hypoxia

Haemoglobin having heme portion

a)5% b)4% c)7%

in male heamoglobin concentration is

a)14-16g/100ml b)20-23g/100ml c)12-14g/100ml

metal involve in haemoglobin production

a)Fe b)Al c)p

vitamin involve produ ction of haemoglobin production is

a)vit.c b)vit.B12 c)both

acid base balance occur due to

a)albumin b)globin c)both

decrease % of haemoglobin called

a)hypoxia b)ischemia c)anemia

increase rate of destruction of RBCs called

a)trauma b)hemolytic anemia c)aplastic anemia

anemia due to endocrine disorder is disturbance in

a)stem cell b)muscle cell c)nerve cell

anemia due to deficiency of vit.B12 and folic acid

a)megaloblastic anemia b)hemolytic anemia c)thalassemia

sickle cell anemia is abnormal form of

a)blood cell b)blood albumin c)haemoglobin

congenital anemia is also called

a)acquired anemia b)fanconi anemia c)aplastic anemia

anemia may also cause by drugs except

a)methotrexate b)carbimazole c)acetaminophenol

epistaxis is bleeding from

a)nose b)gums c)both

important for metabolism ,formation of red blood cells vit.involve

a)vit B6 b)vitB12 c)vitB9

folic acid deficiency cause by drugs except

a)barbiturates b)ethanol c)both

drugs which impair DNA metabolism

a)mercaptopurine b)fluorouracil c)both

vit.B12 is not absorbed due to faiure in

a)intrinsic factor b)hormonal changes c)absorption

dyspnea is shortness of

a)sleep b)breath c)consciousness

treatment of anemia is injection of ---------- intramuscular.

a)1000mcg b)4000mcg c)6000mcg

scaling and fischer in corner of lips

a)cheilosis b)epistaxis c)both

malabsorption due to

a)achlorhydria b)streatorrhea c)both

iron dextrose dose of

a)50-250mg b)60-270mg c)90-150mg

metabolic defect in RBCs membrane.

a)spherocytosis b)hemolytic anemia c)cheilosis

haematoria is blood in

a)urine b)feces c)both

in sickle cell anemia haemoglobin concentration is less than

a)5% b)7% c)8%

in old age E.S.R concentration is

a)increase b)decrease c)normal

ESR increase in

a)septicemia b)polycythemia c)cardiac failure

neutrophils percentage in blood is

a)23% b)45% c)62%

monocytes concentration in blood

a)5.3% b)30% c)23%

size of platelets is

a)2-4micron b)4-6micron c)6-8micron

platelets count in platelet transfusion is below

a)40,000 b)50,000 c) 60,000

blood coagulation is conversion of fibrinogen into

a)fibrin b)thrombin c)both

half life of prothrombin of

a)4days b)3days c)7days

Christmas factor half life is

a)12-15hr b)18-20hr c)3days

hagemen factor half life is

a)12-16days b)10-15days c)unknown

factors formed in liver

a)2 b)10 c)9

factors cause prevention of coagulation

a)decrease temperature b)peptone c)both

if blood RBC having antigen A Than blood group

a)A b)B c)O

genotype “00” produce _____ with 0 blood group.

a)agglutination b)granulation c)both

if father blood group is AA and mother blood group is AB than baby blood group is

a)A&AB B)O C)B

in delay transfusion Rh positive transfused to

a)Rh positive b) Rh negative C)both

layers of arteries of tunica

a) 3 b)4 c)2

Smaller branches of arteries is

a)arterioles b) capillaries c) venules

diameter of capillaries is

a)4um b)5um c)8um

cardiac muscles are

a)voluntary b)involuntary C)both

transfer of cardiac impulse from SA node to

a)AV node b) cardiac muscle c)ventral muscle

already excited muscles cannot re excite called

a)refractory period b)cardiac rhythum c)both

cardiac cycle is initiate by action potential produce in

a)SA node b)AV node c) both

cardiac cycle time period is

a)0.7second b)0.8second c)0.9second

ventricular systole period is

a)0.495 second b) 0.161second c)0.303second

1st heart sound is “LUB” is produce due to

a)atrial systole b)ventricular systole c)atrial diastole

closure of semilunar valve sound is

a)lub b) dub C)both

murmur are excessive degree of turbulence in

a)heart chambers b)blood flow c)both

when depolarization moves toward positive electrode ---------- deflection occur.

a)upward b)downward c)renmain normal

amplitude of P wave is

a)2mm b)4mm c)7mm

in P Wave the voltage value is

a)0.1-0.3Mv b)0.2-0.5mv c)0.6-0.9mv

duration of QRS interval is

a)0.11second b)0.13second c)0.17second

voltage value of T wave is

a)0.2-0.3mv b)0.4-0.5mv c)0.3-0.7mv

slow repolarization after T wave occur is

a) u wave b)p wave c)R wave

duration of wave from SAnode to ventricles is

a)0.12-0.20sec b)0.15-0.18 sec c)0.19-0.22sec

duration of ST interval is

a)0.40sec b)0.43sec c)0.32sec

systolic blood pressure value is

a)120mmHg b) 140mmHg c)80mmHg

blood pressure measure by

a) sphygmometer b) viscometer c) manometer

during sleep blood pressure is

a) increase b)decrease c)remain same

in severe exercise blood pressure increase up to

a)170mmHg b)180mmHg c)160mmHg

Excitement and emotion increase blood pressure

a)systolic b)diastolic c)both

blood pressure= cardiac output *

a)ventricular resistance b)peripheral resistance c) cardiac resistance

cardiac output= stoke volume*

a)cardiac output b)peripheral resistance c)heart rate

pre hypertensive systolic blood pressure

a)120-139mmHg b)130-147mmHg c) <160mmHg

in hypertensive crisis diastolic blood pressure is

a)160mmHg b.)150-169mmHg c)>110mmHg

pulse rate is no of times of heart beat per

a)second b)mint c)hour

heart rate is related to contraction of ---------- per unit time.

a)arteries b)aorta c)ventricles

pulse rate determine through

a)sphygmometer b)manometer c)glucometer

in hemorrhage the word “rhegnumai” means.

a)to break down b)to break forth c) to break forcefully

a healthy peron endure loss of blood

a)5-10% b)10-15% c) 20-25%

pulmonary ventilation occur due to ---------- gradient

a)pressure b)volume c) fluid

principle inspiration muscles are

a)scalene b)sternocleidomastoid c)both

during inspiration intra-alveolar pressure

a)decrease b)increase c)remain same

muscles of expiration include

a)internal intercostal b)rectus abdominis c)both

alveolar pressure in expiration increase from 760mmHg to

a)764mmHg b)763mmHg c)762mmHg

value of tidal volume is

a)600ml b)500ml c)350ml

residual volume is air still remain in lungs after

a)inspiration b)expiration c)both

value of expiratory reserve volume is

a)1000ml b)1100ml c)1200ml

total inspiration capacity is sum of inspiration reserve and

a)residual capacity b)tidal volume c)vital capacity

value of vital capacity

a)4900ml b)4600ml c)4000ml

total lung capacity include

a)tidal volume b)reserve volume c)all of these

the volume of air during first second of force expulsion after maximum inspiration.

a)tidal volume b)FEV1 c)lung capacity

physiological variation IN FEMALE is less than male

a)10% b)20% c)37%

no of alveoli in lungs

a)500million b)300million c)350million

diameter of an alveolus is

a)0.3mm b)0.2mm c)0.5mm

average thickness of respiratory mem brane.

a)0.4um b)0.6um c)0.3um

diffusion pressure from alveoli to blood is

a)40mmHg b)64mmHg c)100mmHg

partial pressure of oxygen in arterial end is

a)40mmHg b)90mmHg c)95mmHg

a cell oxygen pressure is

a)27mmHg b)23mmHg c)35mmHg

partial pressure of carbon dioxide in interstitial fluid is

a)46m mHg b)45mmHg c)49mmHg

oxygen diffusion more than nitrogen

a)3 times b)5 times c)2 times

97% oxygen carried from lungs through

a)proteins b)salt c) haemoglobin

when pressure of oxygen low than oxygen is ---------- from hemoglobin.

a) Released b)attached c)no effect

Each 100ml of deoxygenated blood contain carbondioxide.

a)5ml b)4ml c)7ml

amount of carbondioxide combine with globin

a)25% b)23% c)29%

pressure of carbondioxide in venous blood is

a)45mm b)40mm c)50mm

the pressure of carbondioxide in arterial and venous blood.

a)0.3ml b)0.4ml c)0.7ml

combination of carbondioxide with haemoglobin is formed

a)carbonhaemoglobin b)carbamino haemoglobin c)oxyhaemoglobin

dorsal respiratory group of neuron is located bilaterally In

a)pons b)medull OBLONGATA c) brain stem

during normal respiration the ventral part

a)activated b)inactive c)no effect

pneumotoxic center is situated dorsally

a)medulla oblongata b)pons c)brain stem

the strong inspiration lasts for

a)10sec b)0.5sec c)24sec

in expiration the quantity of heat loss is

a)more b)less c)no effect

during venous return the intrathoracic pressure in related to intraabdominal pressure

a)decrease b)increase c)no effect

granular layer in skin is also called

a)stratum granulosum b)stratum corneum c)stratum spinosum

dermis is sometime called

a)false skin b)true skin c)reticular skin

sebaceous gland involve in

a)lubrication b)excretion c)secretion

80% of heat transfer through

a)sebaceous glands b)hairs c)skin

swallowing is passage of food from mouth to

a)large intestine b)stomach c)esophagus

pharyngeal stage in swallowing is

a)voluntary b)involuntary c)both

duration of primary peristalsis is

a)4hr b)5-8sec c)7sec

due to distension of esophagus by food retaining

a)secondary peristalsis b)primary peristslsis c)both

maximum food accomudation in stomach is

a)1L B)1.5L c)2L

THE MIXING OCCUr due to electrical rhythum produce once in every

a)30sec b)20sec c)10sec

the end released of food from stomach called

a)chyme b)food stuff c)both

HCL present in stomach function is

a)food digestion b)food mixing c)food storage

velocity of small intestine movement is

a)0.5-1cm/sec b)2-3.5 cm/sec c)4.5-6cm/sec

tome period required to to travel chyme entire length of colon

a)40-45hr b)45-48hr c)47-50hr

AvARAGE CARBOHYDRATE intake concentration is

a)380-800gm/day b)400-580gm/day c)500-670gm/day

protein digest by enzyme present in stomach to produce

a)amino acid b)lactic acid c)polypeptide

rapid absorption occur in

a)duodenum b)jejunum c)both

average daily intake of fat is

a)25-160g b)26-60g c)50-600g

25-30% stomach fat digest by enzymes

a)amylase b)lipase c)dehydrogenase

pancreatic lipase involve hydrolysis of

a)protein b)lipids c)carbohydrates

enzyme act on triglycerides are

a)lipase b)esterase c)phosphatase

micelles contain no of molecules

a)30-40 b)20-30 c)50-70

major gland for saliva production

a)sublingual b)mucoid c)both

PH of saliva is

a)4 b)7 c)3

for starch digestion enzymes involve

a)lipase b)phosphatase c)ptylin

deficiency of saliva called

a)deglutination b) xerostomia c) both

daily amount of gastric juice

a)500ml b)25ooml c)1300ml

PH of pancreatic secretion

a)7.1-8.2 b)7.2-13 c)10-12

bile juice store in

a)intestine b)gall bladder c) liver

some metal excrete in bile juice like

a)Zn b)cu c)both

weight of liver is

a) 1.5kg b) 3-4lb c)both

Gallbladder hold bile concentration

a)30-50ml b)40-65ml c)35-90ml

mucosal folding of gallbladderis

a)stone b)rugae b)serous

length of kidney

a)25cm b)45cm c)12cm

juxtamedullary nephron are present---------- of kidney.

a)upper side b)deep c) center

filtration phenomena occur in

a)large intestine b)loop of henle c)bowmann's capsule

urine volume per day

a)1000-2000 ml b)1500-3000ml c)2000-3500ml

regulalatory hormones of urine is

a)growth b)pancreatic c)ADH

NO OF NEURONS IN NERVOUS SYSTEM

a)12million b)12hundred c)12 trillion

axon having very fine filament are

a)termalis b)collaterals c)both

bipolar means one side dendrites and other

a)dendrites b)cell body c)axon

diameter of actin filament is

a)5-7nm b)9-11nm c)3-4nm

skeleton muscle fiber present in group called

a)termalis b)fasciculi c)both

a pigment present in cardiac muscle fiber of old people

a)lipofuscion b)fasciculi c)both

outermost layer of spinal cord is

a)pia matter b)dura matter c)both

spinal nerves no

a)12pir b)31pair c)29pair

neurotransmitter is released from

a)presynaptic cleft b)post synaptic cleft c) both

diameter of eyeball

a)3cm b)4cm c)2.5cm

fibrous layer of eyeball is

a)cornea b) iris c)retina

smallest bone of body is

a)malleus b)ileum c)stapes

bitter taste cause by

a)HCL b)quinine c)HNO3

NO OF TASTE buds are

a)1000 b)10,000 c)100,000

human can distinguish b/w odors

a)2000 b)4000 c) both

example of local hormone are

a)ACTH B)Acetylcholin c)estrogen

insulin and glucagon are hormone of

a)stomach b)pancrease c)kidney

steroids include

a)erythropiotin b)ovaries c)calcitonin

function of growth hormones is ---------- catabolism of protein

a)increase b)decrease c)both

increase in milk ejection is function of

a)oxytocin b)ADH C) Progesteron

hormone produce by para follicular cells called

a)thyroid b)parthyroid c)calcitonin

in kidney calcitonin function is to ---------- calcium

a)increase B)decrease c)no effect

aldosterone cause to increase secretion of

a)calcium b)potassium c) sodium

effect of insulin is to enhance

a)glycolysis b) glucogen synthesis c)both

effect of glucagon is enhance secretion of

a)bile b)glycerol c)triglyc

ANSWERS.

1. C	2. A	3. B	4. A	5. B
6. C	7. B	8. B	9. B	10. C
11. B	12. A	13. B	14. A	15. B
16. A	17. C	18. B	19. A	20. B
21. A	22. A	23. C	24. C	25. B
26. C	27. C	28. C	29. B	30. A
31. C	32. A	33. B	34. B	35. B
36. A	37. B	38. B	39. A	40. C
41. B	42. B	43. B	44. B	45. B
46. B	47. A	48. A	49. B	50. A
51. B	52. A	53. C	54. B	55. B
56. B	57. B	58. B	59. A	60. C
61. B	62. B	63. B	64. B	65. A
66. C	67. A	68. A	69. A	70. A
71. B	72. A	73. B	74. B	75. A
76. A	77. A	78. A	79. A	80. A
81. A	82. B	83. B	84. B	85. B

86. A	87. A	88. B	89. C	90. B
91. B	92. B	93. C	94. A	95. C
96. C	97. A	98. B	99. A	100. A
101. B	102. A	103. B	104. A	105. B
106. A	107. A	108. A	109. B	110. C
111. A	112. B	113. A	114. A	115. C
116. C	117. C	118. B	119. C	120. B
121. C	122. B	123. B	124. B	125. C
126. C	127. C	128. B	129. C	130. B
131. A	132. C	133. C	134. B	135. B
136. B	137. B	138. A	139. B	140. C
141. B	142. B	143. A	144. A	145. C
146. B	147. C	148. B	149. A	150. A
151. A	152. B	153. A	154. C	155. B
156. B	157. B	158. B	159. B	160. A
161. B	162. A	163. B	164. C	165. C
166. B	167. B	168. B	169. A	170. B

171. B	172. A	173. A	174. A	175. A
176. A	177. C	178. C	179. A	180. B
181. B	182. A	183. B	184. A	185. B
186. C	187. B	188. B	189. A	190. A
191. C	192. C	193. A	194. B	195. C
196. B	197. C	198. A	199. C	200. C
201. A	202. C	203. A	204. B	205. A
206. B	207. B	208. A	209. C	210. B
211. C	212. B	213. B	214. C	215. B
216. B	217. A	218. A	219. A	220. C
221. A	222. B	223. C	224. A	225.

SHORT QUESTION

Define Anatomy?

Study of stretcher of organism and their relationship of its parts .the word anatomy derived from two words “ana” means up and tomos means “cutting”.

Define human anatomy?

Branch of science deals wit the study of stretcher of different organs and body parts of human.

Difference b/w embryology and histology?

Histology :branch of anatomy deals with study of stretcher of tissues.

Embryology: branch of anatomy deals with study of embryo and its changing occur during development .

Define cytology?

Branch of anatomy deals with study of cell and its compartment.

Define

Superior

Part of body present toward upside.

Inferior

Part of body toward lower side.

Posterior : part of body near backside

Anterior :part of body near abdomen.

Superficial :part of body near surface.

Proximal:part of body near to reference point.

Lateral:part of body present away medial line.

Ipsilateral : two parts of body present at same side.

Infromedia l :the part of body present near midline and toward lower side.

Flexin: bending in which angle b/w two bones decrease.

Extension: movement in which angle b/w two bones increase.

Abduction: movement of limb away from midline.

Adduction: movement of limb toward midline.

Supination: movement of forearm in which palm facing upward.

Dorsiflaxin: if distance b/w leg and foot decrease.

Planter flexin: if distance b/w leg and foot increase.

Enlist bones of human skull?

1.Frontal bone

2. Temporal

3. Ethmoid

4.Sphenoid

5.zygomatic

6.nasal

7.lacrimal

8.parietal

9.maxilla

10.mandible

Explain fore arm?

It start from scapula and end at elbow joint.it consist of single long bone called humeus.humeus is long bone in upper limb.

What is patella?

It is also called knee cap.it connect femur and tibia its bone are somewhat like triangular shape or sesamoid bone.

Explain vertebral column?

It consist of 4 region

Cervical : consist of 7 vertebra

Thoracic: consist of 12 vertebra.

Lumber: consist of 5 vertebra.

Sacral-coccyx: sacral having 5 fused vertebra while coccyx having 4 vertebra.

Enlist glands in oral cavity?

1) Parotid 2) submandibular

3)sublingual 4)small buccal

Stomach function ?

it is like muscular bag having j shape .it connect to last part of esophagus. its length is 10inches.stomach parts

fundus, body & pylorus.

What is villi and microvilli?

Mucous membrane of small intestine having small finger like projection called intestinal villi and microvilli.

Parts of large intestine?

Ascending colon

Decending colon

transvers colon

sigmoid colon

cecum

rectum

anal canal

function of voice box?

What is larynx?

A larynx lies in front of lower part of pharynx. It is upper prominent part of windpipe and open in trachea. Larynx having many cartilages largest of these is thyroid cartilage. Attaching to upper of thyroid cartilage is epiglottis and it help to close larynx during swalling.

Parts of urinary system?

Kidney ,

Ureter

Urinary bladder

Urethra.

Parts of nephron?

Glomerulus

Renal tubules

Bowman’s capsule

Proximal tubules

Distal tubule

Loop of henle

Collecting duct

Q.Covering of heart?

Epicardium: outer covering

Myocardium: middle muscular layer

Endocardium: inner layer

Q.Define AV valve of heart?

A tricuspid valve b/w right atrium and right ventricle,and bicuspid valve b/w left atrium and left ventricle.

Q.What is aorta?

The largest artery of body originated from left ventricle and extended down to abdomen.

Q.Difference b/w veins and venules?

Vein; large vessels which carry blood from body organs to heart .

Venules: the blood vessel that connect capillaries with veins.

Q.Function of prostate gland ?

The gland of male reproductive system and urinary system .it is oval shape with round tip .it surround the base of bladder .it has 2 robes that surround the urethra.

Q.What is epididymis?

It is mass of coiled tubes that store spermatozoa.

Q.Parts of female reproductive system?

Vagina

Ovaries

Uterus

Fallopian tubules

Hymen

Clitoris

Libia minora

Libia majora.

Q.What is Cell compostion?

Water 65-80%

Protein

Electrolyte

Lipids

Carbohydrates

Q.Explain fluid mosaic model of cell membrane?

It is lipid bilayer in nature in which carbohydrate are sand witch and protein are emended.it provide passage of water soluble substance. they act as transporter by attaching to cell membrane.

Q.Function of rough endoplasmic reticulum?

Ribosomes are attached to surface of endoplasmic reticulum.protein are synthesized by ribosome and than transfer to endoplasmic lumen.

Q.Types of ribosomes?

1.endoplasmic reticulum attached ribosomes involve in protein synthesis

2.free floating ribosomes:produce cytoplasmic protein.

Q.What is Size of mitochondria and its function?

It has different size and shape .it is motile and localized at intercellular site for maximum energy its width 0.5-1um and length upto 10um.

Q.Function of nucleus?

Control cell activity

Protein synthesis

Hereditary information transfer

Control cell division

Control activity of cytoplasm.

Explain connective tissue fiber?

Collagenous fiber

Reticular fiber

Elastic fiber

Q. Difference b/w proteoglycan and glycoprotein?

Proteoglycan: they include hyaluric acid ,chondroitin sulphate, c dermatin sulphate ,keratin sulphate,heparin sulphate.

Glycoprotein: protein and carbohydrate in which protein moiety is dominating.

Q.Types of bones?

Compact bone : appearing as dense area without cavities.

Spongy bone: bone substance is in form of slender.

Q.Function of bone?

Provide framework of body

Give attachment to muscle and tender

Contain red bone marrow in which blood cells are produce.

Provide reservoir for mineral and salt .

Q.WHAT IS Pivot joint?

Movement around one axis e.g bone joint b/w atlas and odontoid process of axis.

Q.What is lymphatic system?

A system which is specialized component of circulatory system since it consist of moving lymph and group of vessel.

Q.Function of lymph?

Return the protein from tissue space into blood .responsible for redistribution of fluid in body.bacteria ,toxic and other foreign bodies are removed from tissue via lymph .lymph flow is responsible for the maintainance of stretcher and functional integrity of tissue

Q.Haemopoisis?

The lymphatic tissue of lymph node serves as the site of the final stage of maturation for some type of lymphocyte and monocyte that have migrated from the bone marrow.

Q.Composition of plasma?

Plasma consist of fluid part (water 91%) and solid part 9%

Organic substance

Albumin 4.5-5.5%

Fibrinogen 0.2%

Globulin 1.3-2%

Prothrombin 0.1%

Plasma complement system consist of 20 protein.

Non protein nitrogenous substance: urea, uric acid,creatinine,amino acid,ammonia

Non nitrogenous substance: glucose,cholesterol,galactose,phospholipid.

Enzyme:amylase,carbonic anhydrase,lipase,phosphate,SGPT,SGOT,LDH.

Pigment:bilirubin

Inorganic substance:sodium,potassium,chloride,chlorine,calcium,iodine,magnesium,phosphotus.

Q. what is Production of RBCs?

1st trimester :RBCs are produce from fetal life .RBCs produce in yolk sac.

2nd trimester: RBCs are produce mostly in liver in spleen and lymph node.

3rd trimester: during the last trimester of pregnancy and after birth they are produce from bone marrow.

Q.Define haemoglobin?

Haemoglobin is red oxygen carrying pigment present in RBCs .it consist of 4% heme and globin 96%.normal value of haemoglobin in men:14-16g/ml,in female 12-14 g/ml, in fetus 23g/ml .

Q.What is anemia?

Anemi define as decrease in level of heamoglobin in blood below the reference level for age and sex of individual.

Q.Define aplastic anemia ?

The RBCs ,platelets and WBCs decrease due to bone marrow defective development .

Q. explain Treatment of anemia?

Anemia is treated by bone marrow transplantation regular red cell concentration transfusion ,platelet transfusion and the use of antibiotics and steroids.

Q.What is pernicious anemia?

The type of anemia in which atrophy condition of gastric mucosa with result in failure of intrinsic factor production.

Q .Explain hemolytic anemia?

Type of anemia there is early rupture of RBCs and released haemoglobin.

Q. what is Sickle cell anemia?

in this type of anemia the abnormal form of Hb called sickle cell anemia cause by inherited genetic defect .

Q.Explain clinical significance of E.S.R?

Diagnostic significance: the E.S.R help in diagnosis of disorder and infection the presence of increase ESR suggest ban organic disease even in absence of any other sign.

Prognostic significance: the ESR also help in prognostic point of view whether the medicine is effective or not against disorder or infection.

Q.Site of WBC'S production?

In fetus: WBCs are develop from the mesoderm of yolk sac

After birth: bone marrow; granulocyte and monocytes and lymphocyte are produce in bone marrow.

Function of platelets?

The principle function of platelets are

1.haemostasis maintainance by

Platelet adhesion, clotting of blood, platelet aggregation, platelets release reaction.

2.maintainance cell integrity

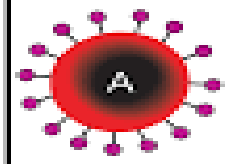
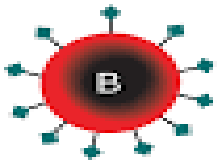
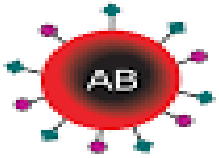
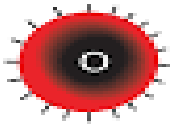
3.provide glycoprotein ,their adhesive to collagen,

4. platelet show slight phagocytic activity.

5.indicate infection while their concentration below 40000

Aplastic anemia etc.

Q.Define blood group?

	Group A	Group B	Group AB	Group O
Red blood cell type				
Antibodies in Plasma	 Anti-B	 Anti-A	None	 Anti-A and Anti-B
Antigens in Red Blood Cell	 A antigen	 B antigen	 A and B antigens	None

Q.Define Rh factor?

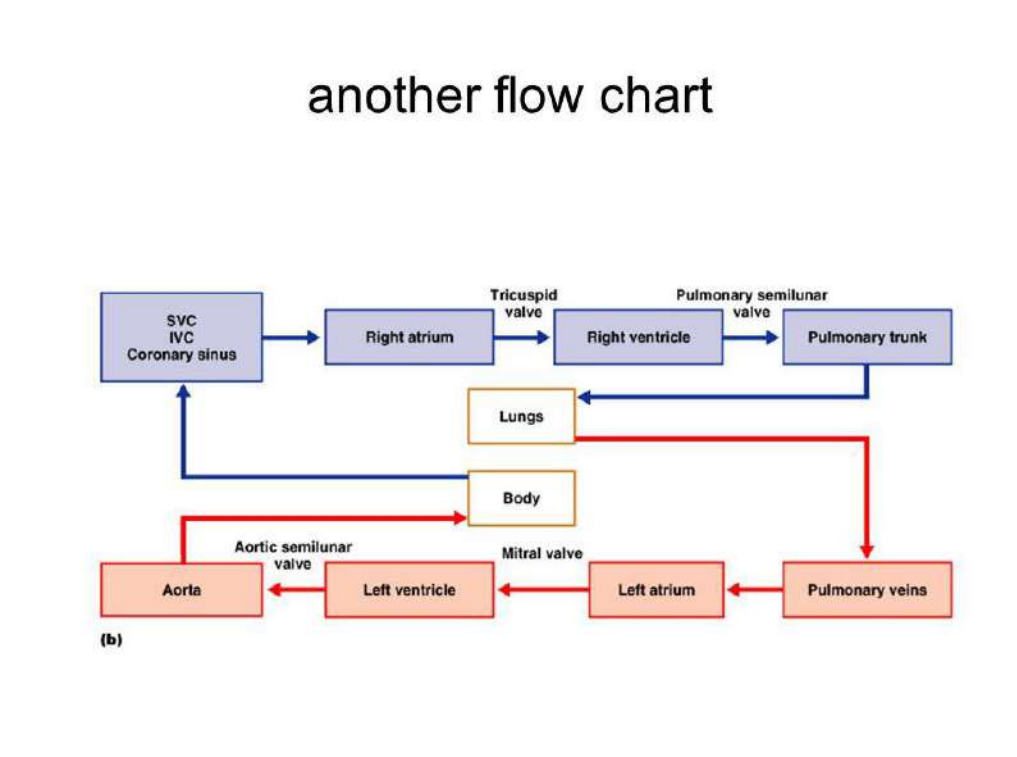
Rh factor are antigen present on surface of RBCs which cause agglutination on mixing blood with anti Rh.D serum.

Rh blood group is due to presence of of gene “D “ which is dominated over its allelomorphic gene ‘g” which is recessive.

Q.HOW Blood group is hereditry factor????

PARENT 1		AB	AB	AB	AB	B	A	A	O	O	O
PARENT 2		AB	B	A	O	B	B	A	B	A	O
Possible Blood Type of Child	O					🩸	🩸	🩸	🩸	🩸	🩸
	A	🩸	🩸	🩸	🩸		🩸	🩸		🩸	
	B	🩸	🩸	🩸	🩸	🩸	🩸		🩸		
	AB	🩸	🩸	🩸			🩸				

Explain systemic circulation?



Q.Properties of cardiac muscles?

Syncytium: all cardiac muscle are work together they act as single unit the whole functional unit called functional syncytium.

1. Automaticity: property of cardiac cell to depolarized spontaneously as sodium leak that cause depolarization .
2. Conductivity: transfer cardiac impulse from SA to all nodes of heart.
3. Contractility: contraction of crdiac muscle due to interdigitation of actin and myosin filament in presence of ATP.
4. ALL OR NONE RESPONSE:all cardiac muscle contract together or not.

Q.DEFINE ECG?

ELECTROCARDIOGRAM IS TECHNIQUE recording electronically the activity of heart .the recording itself is called electrocardiogram.

Q.EXPLAIN ECG?

P wave: electric potential generate by atrial depolarization

QRS interval : potential generate when ventricular depolarization.

T waVE: POTENTIAL GENERATE when ventricle recover from depolarization. Ventricular repolarization

U wave: slightly positive deflection due to slow repolarization of interventricular conduction of papillary muscles.

Q.Define blood pressure?

Pressure exerted by blood on vessel of blood it is atrial pressure exerted a force by circulatory blood on walls of systemic arteries.

Q.Diastolic blood pressure?

The minimum pressure exerted by blood on walls of blood vessel during ventricular diastole.

Value: 80mmHg

Q.How age effect blood pressure?

Infant: 80-90 mmHg

Childhood: 90-110 mmHg

Adult: 110-120mmHg

Elderly: 140-150mmHg

Q.What is regulation of blood control?

Blood pressure= cardiac output* peripheral resistance

Cardiac output= stoke volume* heart rate

Q.What is pulse rate?

The no of time a heart beat per minute in person body.

Normal value is 72 beats /mint.

Q.Define hemorrhage?

Bleeding or abnormal flow of blood .a patient how having internal hemorrhage not visible while external bleeding is visible.

Q.EXPLAIN Parts of respiratory system?

1.upper respiratory system

Nose

Pharynx

Associated stretcher

2.lower respiratory system

Larynx

Trachea

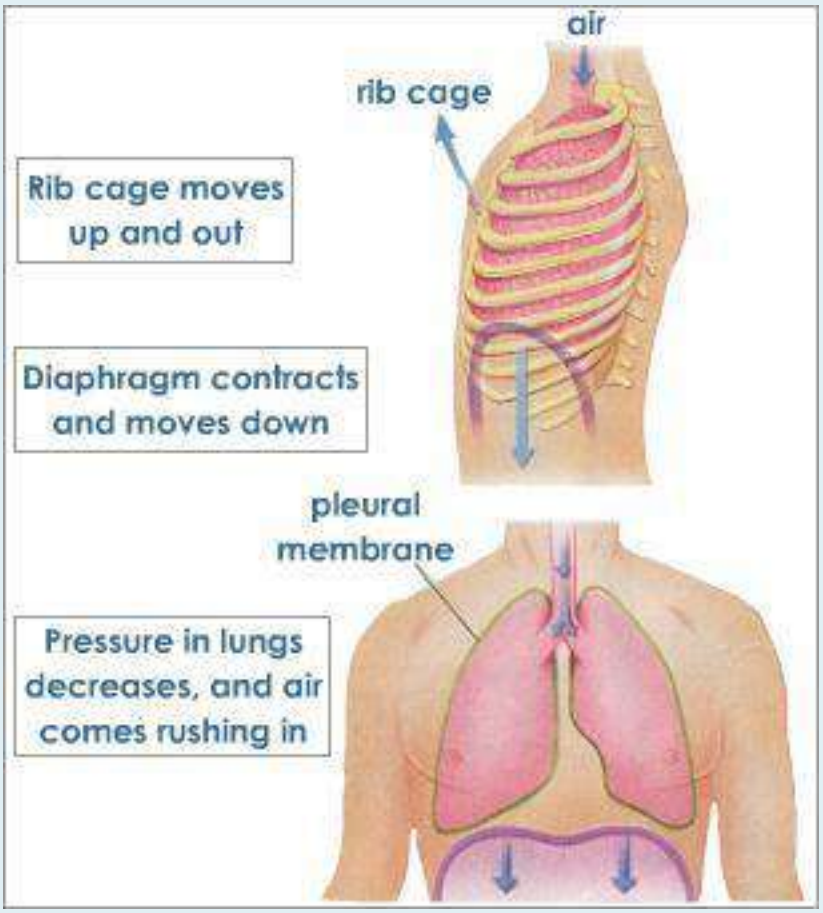
Bronchi

Lungs

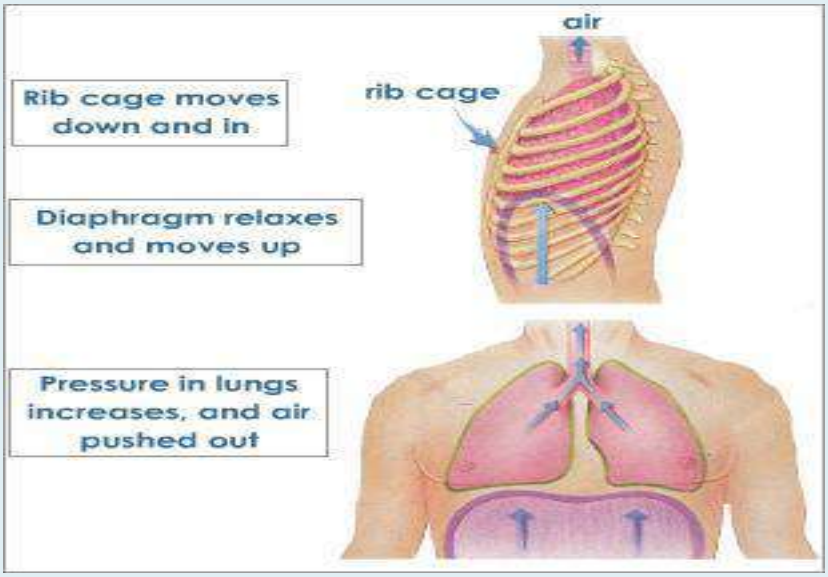
Q.What is Pulmonary ventilation?

The inspiration and expiration of air b/w body and atmosphere.yhe inflow and outflow of air b/w air and alveoli of lungs.this occur due to pressure gradient when pressure inside lungs is less than atmosphere the air transfer from atmosphere to lungs and vise versa.

Q. Define mechanism of inspiration????



Q .Mechanism of expiration?



Q.Define residual volume?

The volume of air still remain in lungs after forceful expiration value is 1200ml.

Q. Functional residual capacity?

The amount of air remain in lungs after normal expiration .its value is 2300ml.

Q.Vital capacity?

The maximum amount of air that a person can expel forcefully from lungs after taking a deep inspiration.

Sum of tidal volum+ inspiration reserve+expiration

Q.Define respiratory unit?

It involve in gaseous exchange including

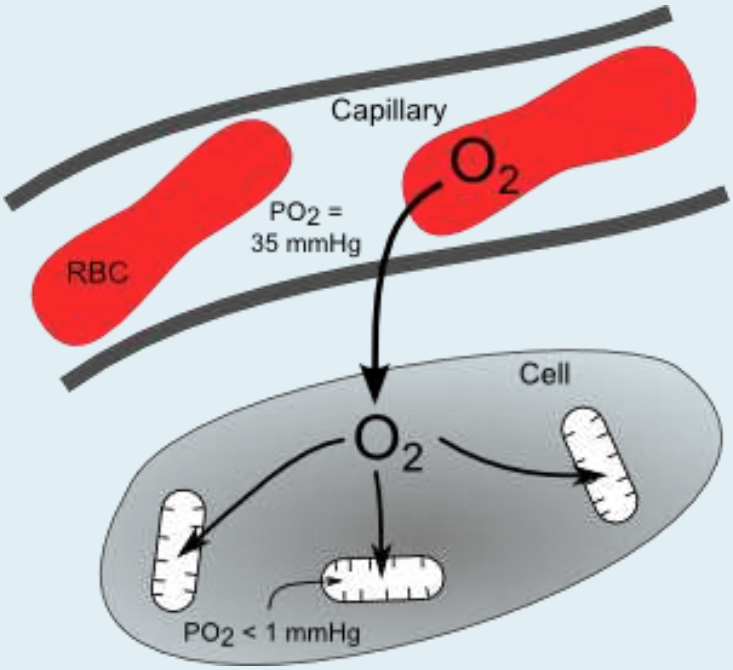
a)alveoli

b)alveolar duct

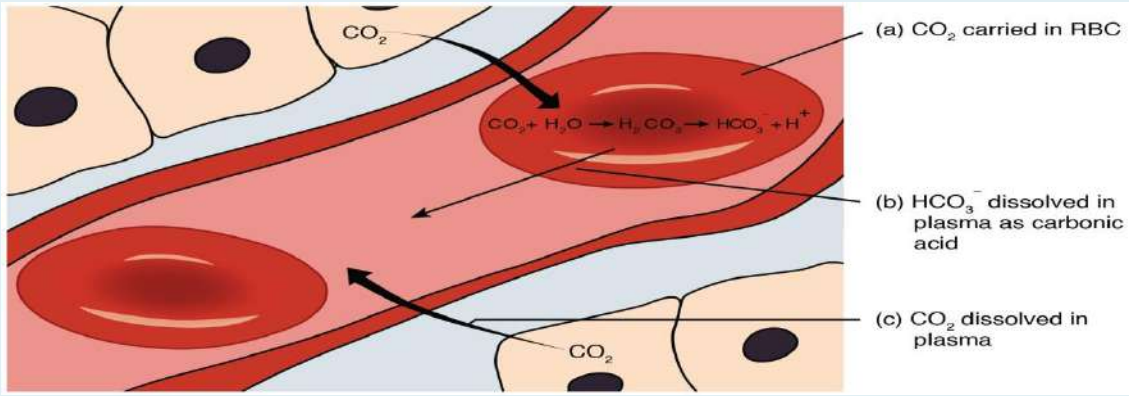
c)atria

d)alveolar sac

Q.diffusion of oxygen activity????/////



Q.Diffusion of carbondioxide



Q.EXPLAI NTransportation of carbondioxide?

Carbondioxide is transport in three forms

Small percentage (7%) transport through plasma by dissolving in upon reaching lungs transfer vto alveoli.

2.about 23% combine with globun part of hemoglobin in form of carbamino hemoglobin.

3.70% of CO_2 is transport in bicarbonate form.

Q.Explain nervous regulation of respiration?

Nervous system regulated the respiratory function by

1.dorsal respiratory group

2.ventral respiratory group

3.pneumotaxic center

4.apneusti c center

Dorsal function to stimulate the inspiration rhythmic discharge inspiration signal.

Ventral group: long column extend from medulla oblongata totally inactivate during normal inspiration activated during forceful inspiration.

Pneumotaxic center: transmit signal during inspiration.

Apneustic center:situated in lower pons help in deep inspiration.

Q.Explain skin strutcher?

Epidermis: superficial layer of skin

Dermis :underlying fatty layer of skin.

Q.How skin help in homeostasis regulation by heat loss???/

Skin blood vessel and sweat gland help in heat regulation the loss of heat by sweating .temprature receptor in part in part of brain called hypothalamus ,detect changes in body in body internal temperature.

Q.What is deglutition?

This is process in which food is passed from mouth to the oropharynx and then to esophagus and lastly into the stomach.

Q.What is Peristalsis?

Movement of food from mouth to stomach

Two types of peristalsis

Primary peristalsis: it begin from pharynx and spread into esophagusduring pharyngeal stage it passage from mouth to stomach time period is 8-10sec.

Secondary peristalsis : it is due to distension of esophagus by retaining food in esophagus these waves are generate when primary peristalsis waves leaves a small part of food in esophagus .this peristalsis waves continue until food is emptied from esophagus into stomach these waves are initially partly by intrinsic neural circuit in esophagus.

Q. What is haustration?

This movement is almost similar to segmental movement which occur in small intestine large circular contraction occur in large intestine in which zone of 2.5cm of circular and longitudinal muscle contraction.

Q.Digestion of protein ????

Q.Absorption of fats ?

The absorption of fats occur by micelle formation each micelle contain 20-30molecules leads to bile salt its emulsification produce monoglyceride and cholesterol forl micelle with bile salt before they absorbe cholesterol and fat soluble vitamin are located within fat soluble interior of micelle.

Q.WHAT IS Gastric glands?

Following are glands and cells which secrete gastric juice

1.cardiac gland

2.pyloric gland

3.fundic gland

4.mucous neck gland

5.perietal cells

6.chief or peptic cell.

Q.What is Pancreatic secretion ?

The pancrease is dual function gland partly exocrine and partly endocrine .the exocrine part secrete digestive pancreatic juice ,while the endocrine part secrete insulin ,glucagon and somatostatin hormone.

Q.Explain about bile juice ?

Yellowish green secretion of liver contain secretory product in humen concentration 500-1000ml of bile juice is secrete by livwer cell its pH is 7.6-

8.6. store in gall bladder involve in digestion and absorption of food specially fatty acid by micelle formation.

Q .Explain liver functions?

1.aid in fat absorption

2.bile salt and igA antibodies inhibit bacterial growth.

3. neutralization gastric acid in small intestine.

4. aid excretion of bilirubin.

Q. Types of nephron??

Cortical nephron: these are nephron whose glomeruli lie close to surface of kidney.

Juxtamedullary nephron: these are nephron whose glomeruli lie deep in renal cortex near medulla.

Q .DEFINE Principle regulation of urine?

The principle regulator of urine composition is antidiuretic hormone in the absence of ADH the kidney excrete a large volume of dilute urine when ADH is present in high concentration the kidney excrete a small volume of concentrated urine.

Q. Explain strutcher of neuron?

Most of neuron consist of following parts

1.cell body

2.axon

3.dendrite

Define histological classification of neuron?

Unipolar neuron:this neuron only function as axon in man these neurons present in one place

Pseudo unipolar neuron: both axon and dendrite arise from a common stem that divided into two processes one acting as dendrite and other as axon.

Bipolar neuron: in this type of neuron there is one axon and other dendrite each arise at different site of cell body opposite to each other and having same size.

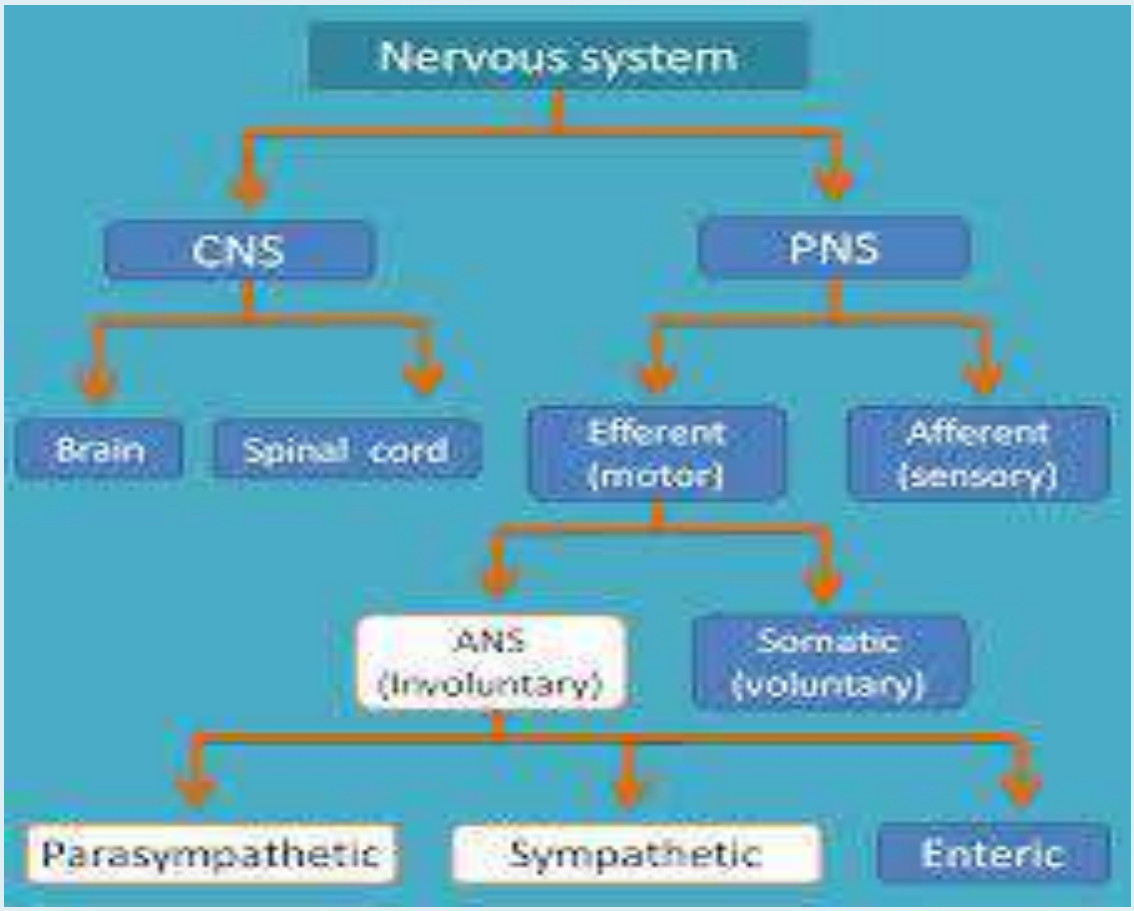
Multipolar neuron: these are large no of dendrites arise from cell body the dendrites arise from one pole of cell cell body or may arise from all parts of cell body.

Neuron without axon: a few neuron in central nervous system having dendrites not having axon.

Q. Explain cardiac muscles?

Cardiac muscles are involuntary but striated .it found only in the myocardium. The cardiac muscle cell are aligned in form of chain with complex junction b/w their ends.

Q.Classification of nervous sysem ?



Q.What is synapses?

A synapse Is junctional point of contact b/w two neuron that transmit impulse from first to the second neuron.

Q.Definition of cerebrospinal fluid(CSF)?

The cerebrospinal fluid is a clear colourless transparent tissue fluid present in cerebral ventricles spinal canal and subarachnoid space.

Q.Mechanism of hearing ?

Q.Classification of hormone based on site of production ?

1.anterior pituitary gland

Growth hormone

Thyroid hormone

Adrenocotropic hormone

Follicular stimulating hormone

Prolactin

Leutrizing hormone

2.posterior pituitary gland

Vasopressin or antidiuretic hormone

Oxytocin

3.ADRENAL GLAND

Mineralocorticoid

Glucocorticoid

Sex hormones.

4.ADRENAL MEDULLA

Epinephrine

Norepinephrine

5.THYROID GLAND

Thyroxin

Triiodothyroid

Calcitonin

6.PARATHYROID GLAND

Parathyroid hormone

7.ISLETS OF LANGERHENS

Insulin

Glucagon

Somatostatin

8.TESTES

Testosterone

9.OVARIES

Estrogen

Progesterone

Relaxin

10.PLACENTA

Estrogen

Progesterone

Human chorionic gonadotrophin

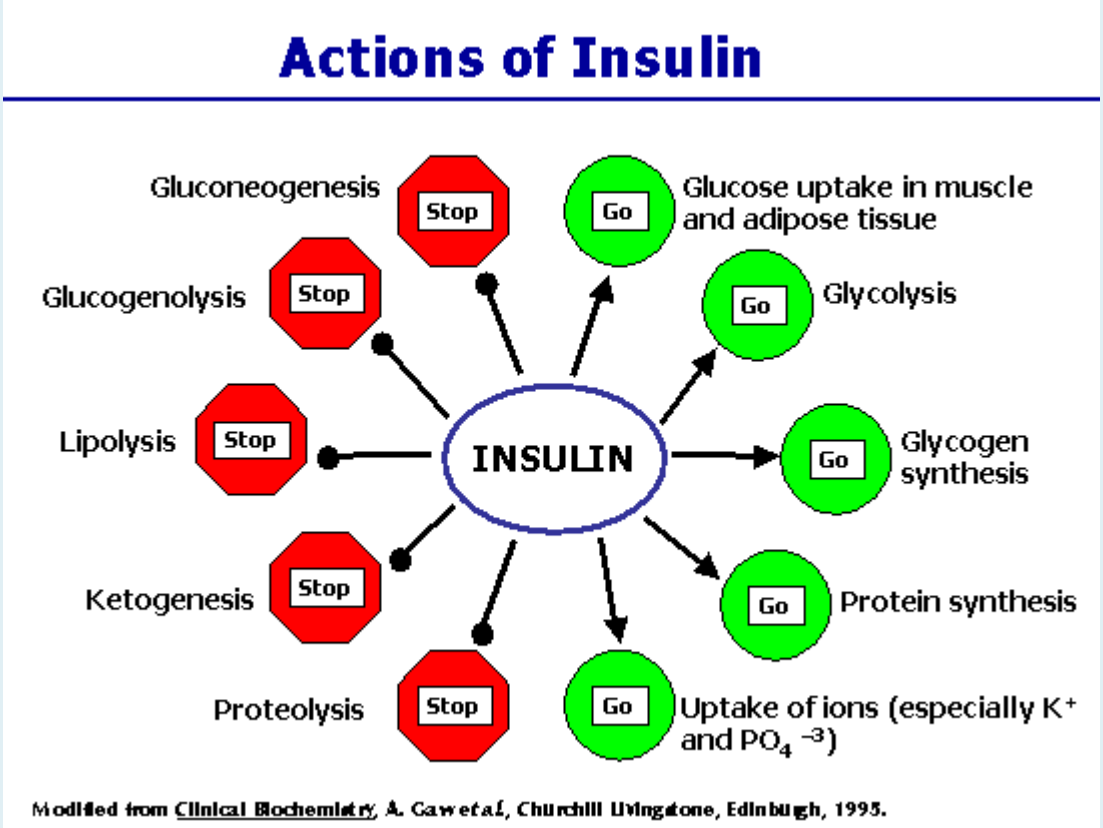
Human somatomammotropin

Relaxin

Q. Function of calcitonin?

This hormone release from thyroid gland involve to maintain homeostasis of blood calcium and phosphate. It decrease blood calcium concentration.,decrease formation of osteoclasts

Q.Action of insulin?



Q. Function of glucagon?

On carbohydrate metabolism

Increase blood glucose level by promoting glycogenolysis in liver.

On protei n metabolism

Promote amino acid entry in hepatic cell,and promote gluconeogenesis,

On fat metabolism

It mobilized fatty acid from adipose tissue by activation adipose cell lipase.,inhibit store triglycerise in liver.

PHARMACEUTICS

1. 1.**COMMUNITY pharmacy types**

a)retail pharmacy b) whole sale pharmacy c)both

2.the section responsible of managing all matter of the industry

a) Wholesale b) administration c) research section

3.Duties and responsibility of all government authorities.

a)Retail pharmacy b) forensic pharmacy c) wholesale pharmacy

4.a person registered as category B from provincial pharmacy council of Pakistan

a) Assistant pharmacist b) pharmacy technician c) both

5.An agent intended for use in diagnosis, cure, treatment ,prevention called

a) Drug b) medicine c) both

6.Digoxin is drug having source

a) Plant b) animal c) microbial

7.Vaccine source

a) Animal b) microbial c) mineral

.8Asprin is drug

a)natural b) plant source c)artificial

- **paracetamol brand name of**

a) Calpol b)disprin c) loprin

- **Acetylsalicylic acid is generic name of**

a)paracetamol b) asprin c) disprol

- **official books are**

a) BP b) Remington c) merck index

- **Knowledge related clinical and pharmacological aspects of drug**

a)british pharmacopoeia b) national formulary c) british national formulary

- **pharmaceutical technological techniques for the development of drug called**

a) USP b) BP C) international pharmacopoeia

- The book contain a detail knowledge regarding all aspects of pharmacy called

a) Remington b) katzung c) both

- **Pulmonary circulaton describe by**

a) Ibn – al nafis b) al- kindi c) abu ali sina

- **The person describe paralysis in detail**

a) Abu ali sina b) al kindi c) ibn-zuhar

- **The person describe active constituents of drug**

A) Al biruni b) abu ali sina c) al –sina

- **Jabber bi hayan describe**

a) Invent lab equipment b) herbal medicine c) procedure of diagnosis

- **The boundary b/w two phases is usually describe as**

A) Surface tension b) interface c) intermolecular force

- **By increase in temperature the surface tension is**

a) Increase b) decrease c) both

- **Emulsifying agent are ---------- surface tension.**

a) Increase b) decrease c) no effect

- **Hydrogen bonding ---------- surface tension.**

a) Increase b) decrease c) both

- **Viscometer use to measure**

a)temperature b) viscosity c) surface tension

- **falling ball viscometer is type if**

a) Wt.balance b) viscometer c) thermometer

- **Viscosity ---------- by increase size of molecules.**

a) Decrease b) increase c) both

- **The fundamental QC test for syrup,suspension thickness is**

a) Viscometer b) thermometer c) wt.balance

- **Methycellulose are use as enhancer of**

a) Temp b) colour c) viscosity

- **Thickness of liquid substance is called**

  a) Viscosity b) coloring activity c) both

- **Atom is derived from greek word means**

  a) Divisible b) undivisible c) unvisible

- **The process in which electrically neutral atom or molecule by removal or addition of electron is**

  a) Electron affinity b) ionization c) hydrogen bonding

- **The negative log of hydrogen ion concentration is called**

  a) PH b) VISCOSITY c) ionization

- **The aim of PH indicator is to determination of type of**

  a)bond b) compound c) sample

- **the indicator that change their colour during precipitation reaction.**

  a) Redox indicator b)acid base indicator c) precipitation indicator

- **The blood PH is**

  a)7.3 b) 7.4 c) both

- **the mixture of compound that resist change PH of any solution is called**

  a) Solution b) suspension c) buffer

- **Citric acid/sodium citrate buffer system PH is**

  a) Basic b) neutral c) acidic

- **The compound use in fermentation process.**

  a) Buffer b) acidic solution c) isotonic solution.

- **Nacl is buffer concentration is**

  a) 0.9% b) 1.1% c) 3.6%

- **The solution having greater osmotic pressure than body fluid is called**

a) Hypertonic b) hypotonic c) isotonic

- **The solution having less osmotic pressure than body fluid is called**

a)hypertonic b)hypotonic c)isotonic

- **example of isotonic solution is**

a) Nacl b) Hcl c) H2SO4

- **Any pharmaceutical product which has define prescribed amount of API called**

a) Drug b) medicine c) dosage form

- **Asprin is**

a)excipient b) active ingredient c) both

- **to provide stability of product is function of**

a) Vehicle b) excipient c)active drug

- **When semi solid material use in drug**

a) Vehicle b) base c) both

- **Acacia is**

a) Binder b) disintegrant c) diluent

- **Glidant example is**

a) Colloidal silica b) talc c) starch

- **Banzylkonium chloride example is**

a) Suspending agent b) surfactant c) thickening agent

- **Tocopherol is use as**

a) Antioxidant b) chelating agent c) surfactant

- **Buffering agent are**

a) Potassium phosphate b) ascorbic acid c) edetate sodium

- **Carotenoids are**

a)coloring agent b) flavoring agent c) glidant

- **the substance that dissolve another substance is called**

a) Solvent b) solute c) solution

- **Children who cannot take tablet or capsule can easily take ----------**
  a) Injection b) suspension c) solution
- **Parts of solvent required for 1 part of solute ---------- very soluble.**
  a) <1 b) 10-30 c) 100-1000
- **The process in which water insoluble substance dissolve**
  a) Surfactant b) thickner c) diluent
- **The dry mixture having all ingredient of drug except.**
  a) Buffer b) colourant c) solvent
- **According to BP the concentration of sugar in water is**
  a) 66.7% b) 85% c) 69%
- **syrup having no medicinal agent called**
  a) Flavoring syrup b) medicated syrup c) both
- **Syrup can use as**
  a) Demulcent b) sweetning agent c) both
- **Concentration of benzoic acid as preservative is**
  a) 0.1-0.2% b) 0.3-0.5 % c) both
- **Syrup storage temperature is not exceeding**
  a) 30c b)40c c)25c
- **Substituent of alcohol and glycerine is**
  a) Propylene glycol b) ethyl alcohol c) methylcellulose
- **The percolation is method of preparation of**
  a) Cream b) ointment c) tincture
- **The discontinuous phase in suspension is called**
  a) Dispersion b) dispersed phase c) both
- **Particle range in colloidal dispersion is**
  a) 1nm-0.5um b) 2nm c) 10um
- **Label "shake well before use" on which dosage form**

  a)suspension b) syrup c) capsule

- **when two immisible liquids are combine called**

  a)suspension b)solution c) emulsion

- **types of emulsion**

  a)o/w b)w/o c)both

- **the material use to reduce interfacial tension called**

  a)suspending agent b) emulsifying agent c)both

- **in dry gum method ratio of oil:water:gum**

  a)4;3;2 b)3;2;1 c)4:2:1

- **IN BOTTLE METHOD ratio of oil water and gum is**

  a)4:3:2 b) 4:2:1 c)4:4:2

- **incompatibilities of emulsion are**

  a)coalescence b)creaming c)both

- **lotion intended for external use by**

  a)cotton wool b)gauze c)both

- **lotion having property of skin moistening by adding**

  a) Glycerine b)cellulose c) alcohol

- **The alcoholic or oleaginous preparation of various medicinal material intended for external application called**

  a) Lotion b)liniment c) cream

- **The substance cause inflammation of area to which applied not directly effect.**

  a)irritant b)counter irritant c) both

- **examples of propellant are**

  a) Butane b)difloroethane c)both

- **---------- is use to prevent leakage of formulation from container called**.

  a)stem b)gas kat c)spring

- **deliver the aerosol product in proper and desire form called**

  a)actuator b)spring c)dip tube

- **a fine particles for inhalation is called**

  a)vaporizer b)humidifier c)nebulizer

- **the finally divided solid applied topically usually to nasal pharyngeal tract called**

  a)nebulizer b)spray c)vaporizer

- **vehicles in parenteral preparation is**

  a)water b)oil c)both

- **powder use both**

  a)external b)internal c)both

- **external powder are**

  a)bulk powder b)dusting powder c)both

- **ORS is**

  a)divided powder b)bulk powder c)dusting powder

- **CO2 released in granules**

  a)divided b)effervescence c)dusting

- **tablet can use in**

  a)oral b)vaginal c)both

- **maxit is tablet**

  a)enteric coated b) film coated c) compressed

- **paracetamol is ---------- tablet.**

  a) Compressed b)multilayer c)film coated.

- **Angised is example of**

  a)buccal tablet b) effervescence tablet c) film coated

- **CaC 1000 is example of tablet**
  a) Sublingual b) effervescence c)buccal
- **Water proofing and sealing coat the material use**

  a)shellac b) wax c) cellulose
- **for tablet smoothing of tablet no. of coats are**

  a)5-10 b)3-5 c)4-8
- **hydroxypropyl methylcellulose phthalate use as coating agent in**
  a) Enteric coating b) film coating c) dip coating
- **The tablet coating in basket than dip in coating solution.**
  a) Dip coating b) laminated coat c) compressed coating
- **Short part of capsule shell**
  A) Body b) cap c) both
- **The solid dosage form intended for body insertion**
  a) Suppositories b)emulsion c) capsule
- **Wt. of rectal suppositories in adult**
  a) 1g b) 2g c) 4g
- **Length of suppositories**

  A)34mm b) 32mm c)36mm
- **Length of urethral suppositories for males is**

  a)3-6mm b)4-6mm c)5-9mm
- **wt. of urethral suppositories in females**
  a) 2g b)4g c) 3g
- **Fatty suppositories melting point is**

  A)30-35 b) 34-37 c)25-30

- **The polymer of ethylene oxide and water is called**

  a) Polyethylene glycol b)cellulose c)paraffin

- **Soft greasy semi solid material use for mucosal membrane**

  A) Cream b) ointment c) lotion

- **Water soluble base is**

  a)gelatin b)carbowax c)cellulose

- **tituration is method for preparation of**

  a)cream b)ointment c)lotion

- **close in collapsible bottles**

  a)ointment b)ointment c)lotion

- **dispersion of insoluble powder substance in a fatty base is called**

  a)ointment b)paste c)liniment

- **for preparation of pharmaceutical product take guideline from**

  a)BP B)USP C)NP

- **The written order from physician ,dentist or registered practitioner is called.**

  a)description b)prescription c)explanation

- **superscription having symbol**

  a)Rx b)Rd c) Rc

- **the word "BD" Means**

  a) Two times daily b) one time daily c) three times daily

- **Recipe means**

  a) I take b) u take c) we take

- **Signature abbreviation is**
  a) Sig b) dia c) Rx

- **In frieds rule child age is in**

  a)years b)months c)both

- **in compounding before measuring all material place on wt.balance on**.

  a)left side b)right side c) at any side

- **creams packing is**

  a)tube b)jars c) bottles

- **in pricing of prescription included**

  a)cost of packing b)cost of ingredients c)both

- **coding system 1 include net profit is**

  a)10% b) 1% c) 90%

- **adding cost of ingredients *markup + main fee according to system**

  a)1 b)2 c)3

- **the medicine cannot dispense without prescription is called**

  a)toxic b)harmful c)both

- **in group B drugs are dispense with prescription which can**

  a)not filled b)filled c) no effect

- **OTC medicine include**

  a)group A b)group B c) Group X

- **The art of preparing a product ready for transportation**

  a)delivery system b)packing c)both

- **light resistant container are**
  a) Transparent b) opaque c)colourless

- **Ampoules are ---------- container**.

  A)single dose b)multiple dose c) double dose

- **Semi solid are packed in ---------- bottle**.
  a) Wide mouth b)narrow mouth c) dropper

- **Glass is transparent having network of**

  a)silica b) oxygen c)both

- **soda lime glass is**

  a)type 2 b)type 1 c) type 3

- **polyamide synonym is**
  a) Styrene b) nylon c) lead

- **Collapsible material is**
  a)lead b)iron c) aluminium

- **jam bottle cap are example of**

  a)screw cap b)lug cap c) threaded screw cap

- **CaC 1000 cap example of**

  a)roll on b) press on c) crimp on

- **the packing having transparent seal are called**

a)blister b) strip c) both

- **strip and blister are packing**

a)single dose b)multiple dose c)divided dose

- **carbohydrate and fats are use as source of**

a)electrolyte b)energy c)mineral

- **amino acid concentration in adult is---------- g/kg/day.**

a)1-2 b)3-4 c)5-6

- **concentration of dextrose in TPN is ----------%**

a)5 b)70 c) BOTH

- **indication of TPN is**

a)colitis b)renal failure c)burn

- **the process to eliminate microbes from preparation.**

a)aseptic process b) sterilization c) cleaning

- **the last ingredient adding in TPN just before administration**

a) Carbohydrate b)fats c)vitamins

- **Insolubility is ---------- incompatibility.**

a)physical b) chemical c)pharmaceutical

- **liquification is --------- incompatibity.**

a)physical b)chemical c)pharmaceutical

- **acid-base reaction are ---------- incompatibity.**

a)chemical b)physical c)therapeutical.

- **Chemical incompatibities are correct by addition.**

a)fats b)diluent c) dessicant

- **over dose may result from excessive----------**

a)double dose b)single dose c) multiple dose

- **skin preparation are prescribe for eye are**

a)right prescription b) wrong prescription c) failed prescription

- **the substance that deposit at surface is called**

a)absorbent b) adsorbent c)adsorbate

- **many drugs are adhere to GIT membrane called ---------- adsorption**

a)physical b)chemical c)both

- **by increase in temperature adsorption ----------**

a)increase b)decrease c)no effect

- **by heating and removal of volatile component process called**

a)evaporation b)calcination c) vaporization

- **RPM means**

Revolution per mint b) revolution per hour c) revolving per mint

- **Micro centrifuge speed is**

a) 12000-13000rpm b) 14000-15000rpm c) 15000rpm

- **Speed of ultr centrifuge is**

a) 60000 b)70,000 c) 25000rpm

- **Cooling and evaporation are method of**

a)centrifugation b) vaporization c) crystallization

- **for washing of solid process called**

a)decantation b) distillation c) crystallization

- **important dessicant use are**

a)silica gel b) sodium carbonate c) potassium citrate

- **increase stability of product by adding**

  a)diluent b) distillated ingredient c) dessicant

- **miscible volatile oil separated by process of**

  a)fractional distillation b)vacuum distillation c) Steam distillation

- **the process removal water of crystallization is called**

  a) Exsiccation b) distillation c) dilution

- **In CUSO4 last water molecule released**

  a) 100C b) 200C c) 300c

- **Six water molecules are released from FESO4.7H2O BY**

  A)water bath b) 30c c) 23c

- **Separation of drug into particles is called**

a) Evaporation b) vaporization c)elutriation

- **Small scale evaporation can occur at**

a) 200c b) 100c c0 150c

- **Fusion are commonly called**

a)drying b)evaporation c)melting

- **the process use in manufacturing of ammonium chloride.**

a)trituration b) levigation c)sublimation

- **the word trituration means**

a)drying b)rub to pieces c) grinding

- **loss of water from hydrated crystals**

a)evaporation b)fusion c)efflorescence

- **vehicle for nasal preparation**

a)dextrose b)water c)Nacl 0.9%

- **as viscosity enhancer the substance use**

a) Glucose b)dextrose c)methyl cellulose

- **The material moulded from rice paper is called**

a)lozenges b)cachet c)tablet

- **liquid preparation which dispense in large quantity is called**

a)gels b)syrup c)draughts

- **the dusting powder that are blown by an atomizer called**

a)irrigant b)insufflation c)granules

- **translucent non greasy semi solid use externally are called**

a)lincture b)lozenges c)jellies

- **the object to be taken to be force on object due to gravity**

a)mass b)weight c)measurement

- **for area measurement use**

a)acres b)square feet c)both

- **density is equal mass of substance per**

a)weight b)length c)volume

- **gram of solute in milliliter of solution called**

a)w/w b)w/v c)v/v

- **70ml of alcohol in 100 ml of water called**

a)w/w b)v/v c)w/v

1. c	2. b	3. b	4. b	5. a
6. a	7. b	8. c	9. a	10. b
11. a	12. c	13. b	14. a	15. a
16. a	17. a	18. a	19. a	20. b
21. b	22. a	23. b	24. b	25. a
26. c	27. a	28. b	29. b	30. a
31. c	32. c	33. c	34. c	35. c
36. c	37. a	38. a	39. a	40. b
41. a	42. c	43. b	44. b	45. b
46. a	47. b	48. a	49. b	50. c
51. a	52. a	53. c	54. a	55. a
56. c	57. a	58. a	59. c	60. a
61. b	62. a	63. c	64. b	65. a
66. a	67. c	68. c	69. c	70. c
71. a	72. c	73. c	74. a	75. b
76. b	77. b	78. b	79. a	80. c
81. a	82. c	83. c	84. c	85. a
86. b	87. c	88. b	89. a	90. a
91. b	92. a	93. b	94. a	95. a
96. b	97. a	98. b	99. b	100. a
101. a	102.	103.	104.	105.

SHORT QUESTIONS

Define

Pharmacy

The branch of medical science that deals with study of discovery ,development ,synthesis,manufacturing,action,quality,quantity,distribution,regulatory affairs,clinical use,and marketing pattern of drug is called pharmacy.

Q.Production section?

The section in pharmaceutical industry where the material manufacture according to specification .including

Tablet section

Capsule section

Semisolid section

Injectable section

2.quality control section

The section in industry where raw material and finished product checked properly.

3.research and development

The section in pharmaceutical industry where research done on development of new product and improvement of existing

4.administration

The backbone of pharmaceutical industry responsible for managing all matter of industry.

5.ware house

The section where raw material and finished product store.

Q.PHARMACIST?

A person who hold category A from Pakistan pharmacy council recongnized institute and he has registered certificate from any provincial council of Pakistan is known as pharmacist.

Q.CLINICAL PHARMACY?

The specialty of pharmaceutical science that deals with study of drug in contrast with their specific disease .medication review,drug interaction ,drug formulary ,pharmaco-economics studies.

Q.OVER THE COUNT MEDICATION?

The group of drugs that does not required any prescription for their dispensing this group contain

Multivitamin,NSAID.

Q. what is MICROBIAL SOURCE DRUG?

This group of medication that synthesics by using different microorganism this group include following drugs

Antibiotics,,insulin,vaccine.

Q.BRAND NAME?

These are name of medicine that give on basics of proprietorship. These names are given identification the one product from other.

e.g: panadol, calpol, disprol are brand name of paracetamol

Q.STRENGTH?

The amount of drug in the dosage form or unit of the dosage form

e.g:500mg capsule ,250mg/5ml suspension.

Q.BRITISH PHARMACOPOEIA?

This book contain complete data

- Complete monograph of drug
- Qc & QA of pharmaceutical production section of pharmaceutical industries.
- QC test of dosage form
- Identification and analytical test of drug.

Q. UNITED STATE PHARMACOPOEIA?

The important pharmacopoeia use to determine the strength ,quality,quantity,purity and labeling of drug.

Q.BRITISH PHARMACOPOEIA CODEX?

It contain

1.dispening method of medicine specific to their nature.,dispensing techniques,a thoroughly study of pharmacological aspects of drugs, manufacturing and formulation technique of drug.

Q.SURFACE TENSION?

The force acting over the surface of the liquid per unit length of surface .

Unit:force per unit area N/m2.

Q.APPLICATION OF SURFACE TENSION?

1.emulsifying agents reduce the surface tension of oil and water phase which result in stability of emulsion.

2.bile salt reduce surface tension of fat in duodenum which result in solubility of lipids help in food digestion.

Q.IONIZATION ?

The process in which charge particles are produce from neutral atom by bombardment of electrons. As the result the positive and negative charge particles are produce.

Q.PH

The negative log of hydrogen ion concentration .it has scale from one to 14 .from 1-6 there is acid nature of subtsnce while at 7-8 there are neutral prticles and from 8-24 base substance are produce .

Q.TYPES OF PH INDICATOR?

There are three types of PH indicator

1.Acid –base indicator

There are indicator that change their colour as we change PH of solution .e.g: methyl orange

2.REDOX indicators

The compounds that changing colour during oxidation and reduction reaction e.g:Kmno4

3.precipitation indicators

Those indicators that change their colour during precipitation reaction are called precipitation indicators e.g; potassium chromium chloride.

Q.Explain BUFFER?

The compound or mixture of compounds that resist change in PH of solution on slight addition of acidic or basic solution or compound.

e.g:HCL-sodium citrate PH range is 1-5

Q.ISOTONIC SOLUTION ?

The solution having same osmotic pressure on both side of semipermeable membrane.

Q.HYPERTONIC SOLUTION?

THE solution having greater osmotic pressure than body fluid

Q. **HYPOTONIC SOLUTION?**

The solution having less osmotic pressure than body fluid .

Q.DRUG DELIVERY SYSTEM?

It is administration of drug or medicine to living system for their desire action in body cure, management or prophylaxis of diseases.

Q.DOSAGE FORM

The physical form of dose of drug .any pharmaceutical product which is ready for use of patient is known as dosage form .

Q.ACTIVE INGREDIENT

This is a pharmacological active ingredient in a medicine e.g;asprin, insulin, digoxin

Q.EXCIPIENT

The substance other than active medicaments in formulation which do not having any pharmacological activity just involve in delivery of active ingredient to its site of action.

Q.DIFFERENCE B/W BASE AND VEHICLE

- BASE

When semi solid or solid product is used the vehicle is called base it provide shape to product, help in delivery.

- VEHICLE

The liquid use to dissolve or suspend the medication the liquid is known vehicle.

Q.BINDER/DISINTEGRANTS?

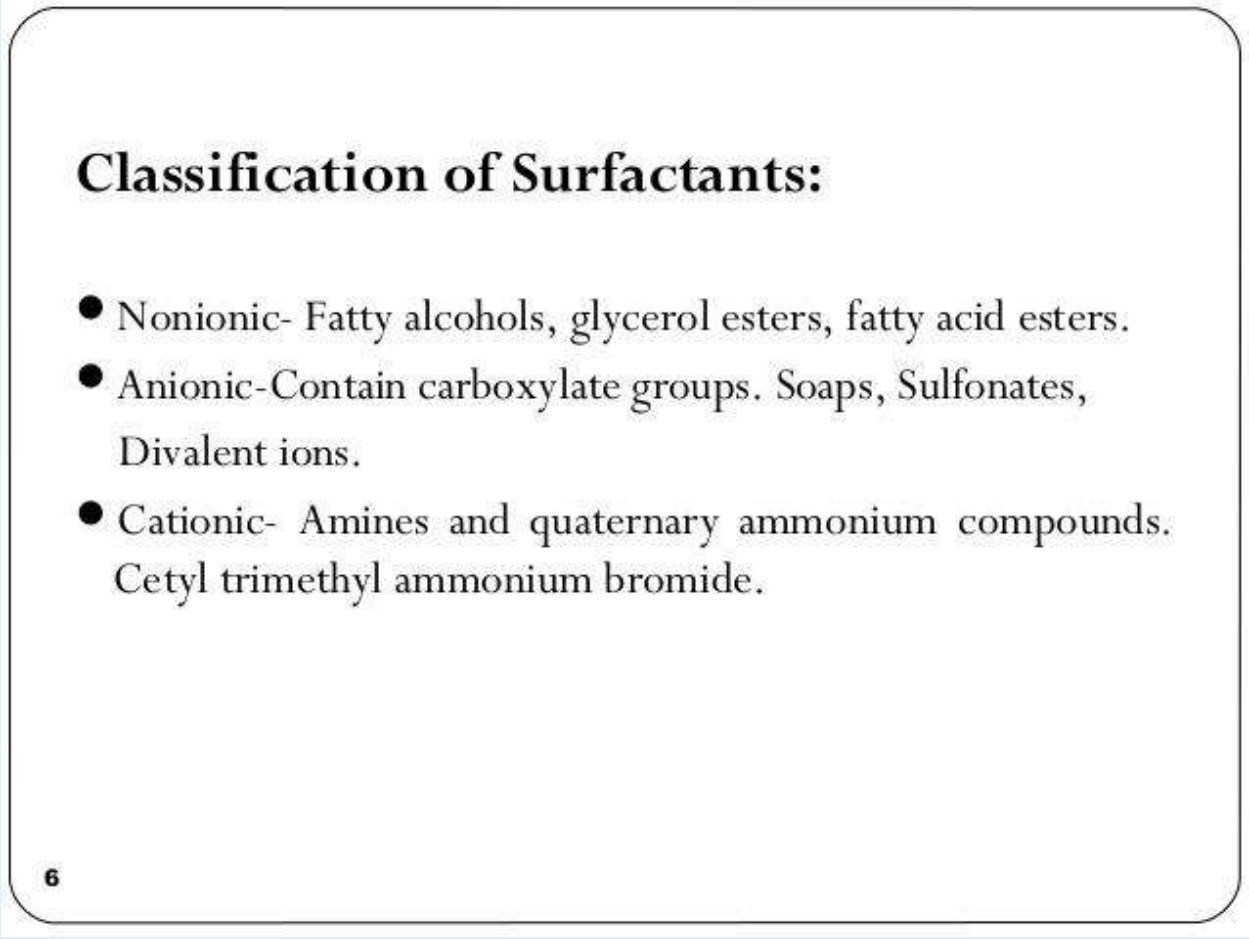
BINDER : the substance cause adhesion of powder particles in tablet granulation e.g:acacia,gelatinetc.

DISINTEGRANT: to promote tablet break up into small particles after administration e.g:starch,cellulose, sodium alginates.

Q.what is SURFACTANT?

It is define as substance which when added into liquid lower the interfacial tension between two phases thus make them miscible it is use when two immisible ingredients available make them miscible e.g: span, tween

Q.Classification of surfactant?



Q.WHAT IS STABILITY?

The capability of formulation in specific container to remain within the physical ,chemical ,microbiological ,therapeutical ,and toxicological specification.

Q.WHAT IS CHELATING AGENT?

Substance that form stable water soluble water soluble complexes with metal . these metal might promote instability e.g:edetate disodium

Q.Classification of dosage form on basics of formulation ?

1.liquid dosage form

Solution,syrup,elixir,spirit,tincture,liniment,spray,aerosol.

2.solid dosage form

Powder and granules,tablet,capsules,suppositories

3.semisolid dosage form

Ointment,creams,pastes,gels.

Relative Terms of Solubility

Descriptive Term	Parts of Solvent required
Very Soluble	Less than 1
Freely soluble	From 1 to 10
Soluble	From 10 to 30
Sparingly soluble	From 30 to 100
Slightly soluble	From 100 to 1000
Very slightly soluble	From 1000 to 10,000
Practically soluble or Insoluble	From 10,000 and over

Q.SYRUP

Syrup are sweet ,viscous, concentrated aqueous solution of sugar or sugar – substitutes in water or any other suitable vehicle.with or without adding flavoring agent and medicinal substance.

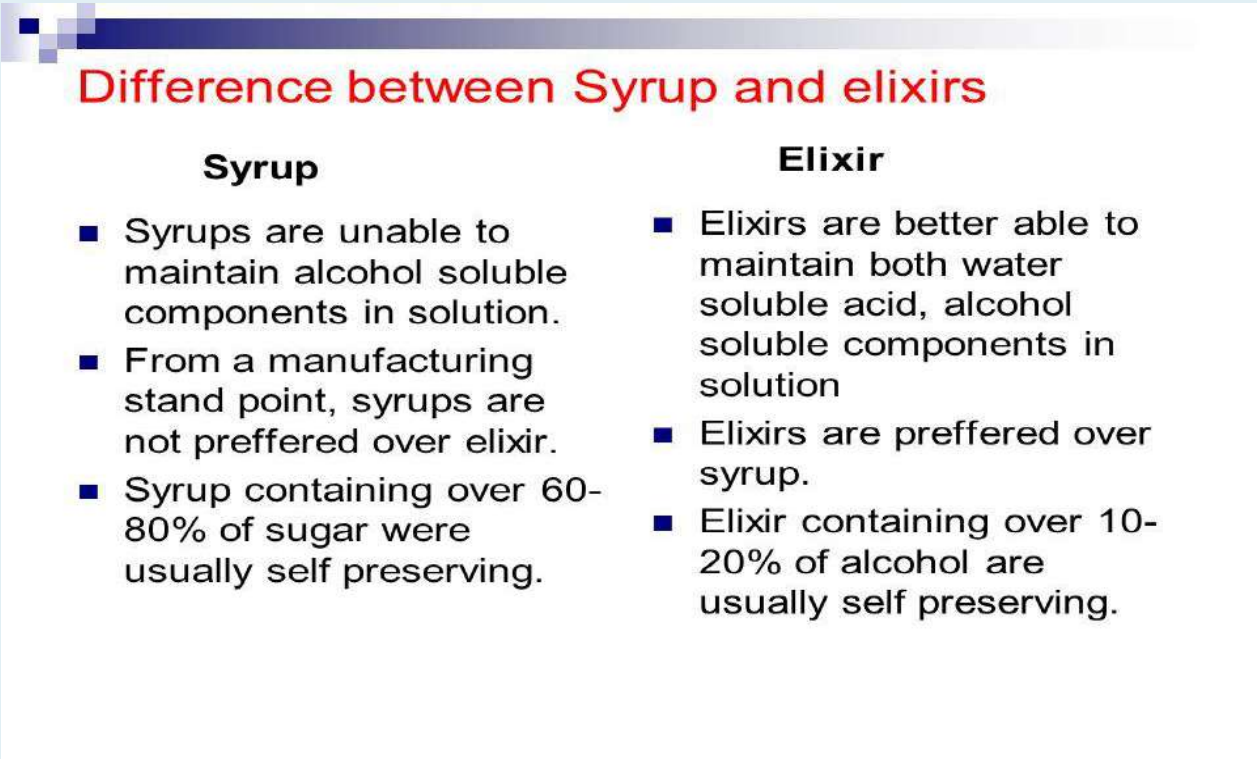
Q.ELIXIR

Elixir are clear sweetened hydro-alcoholic solution intended for oral administration and are usually flavore to enhance their palatability.

Q.PEDIATRIC ELIXIR

In pediatric elixir alcohol content are very small .sometime syrup do contain alcohol content up to 10% on the basics of which they are difficult to be differenciated from elixirs.e.g:ephedrine syrup.

Q. COMPARISON B/W ELIXIR AND SYRUP?



Q.WHAT IS Disperse system?

THERE ARE TYPES OF PREPARATION CONTAINING undissolve or immisible drug distribution throughout a vehicle.

Dispersed phase:the substance distributes is referred to as dispersed phase

Dispersion medium: the vehicle used

Q.difference b/w suspension and emulsion?

Differences between Emulsions and Suspensions

Emulsions	Suspensions
These are biphasic liquid preparations containing two immiscible liquids one of which is dispersed as minute globules into the other	These are biphasic liquid dosage form of medicament in which finely divided solid particles are dispersed in a liquid
Globule size of the dispersed liquid is in the range of 0.25 to 25µm	Particle size of suspended solid is in the range of 0.5 to 5 microns
Emulsifying agent is required to make a stable emulsion	Suspending agent is required to make a stable suspension
Emulsions are of two types oil-in-water type and water-in-oil type	Suspensions are of two types flocculated and deflocculated
There are several tests to confirm type of emulsion	There are no tests to confirm type of suspension
During storage freezing should be avoided as it may lead to cracking	During storage freezing should be avoided as it leads to aggregation

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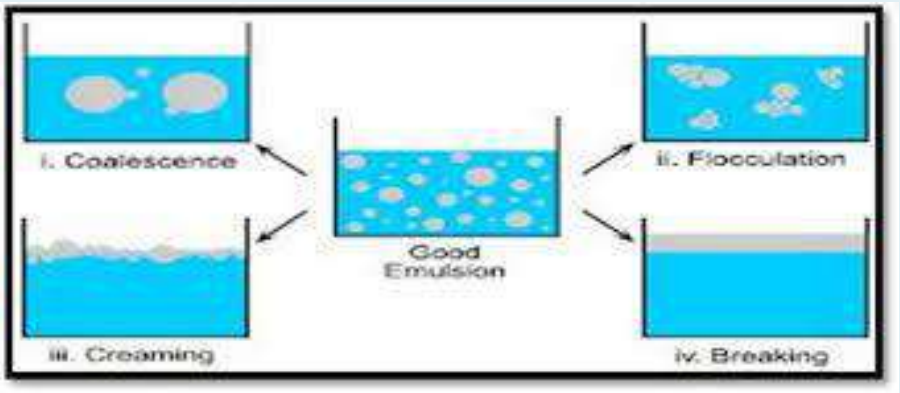
Q.EXPLAIN INSTABILITIES OF EMULSION?



Flocculation

The individual particles of disperse phase come in contact with each other to form loose aggregates and create a network like stretcher.

CREAMING

Upward or downward movement of disperse globules in the continuous phase .in creaming they form a thick layer at the surface of emulsion.

CRACKING/BREAKING

Separation of internal phase from the emulsion is called breaking.two separate layer of dispersion produce.

COALESCENCE

Means to grow together ,to fuse. The dispersed phase fused to form large globules.

Q. What is LINIMENT?

They are slcoholic or oleganeious preparation of various medicinal substance intended for external application to skin generally with friction and rubbing.

Q.WHAT IS AEROSOL?

Pressurized dosage form contain one or more than one active ingredient which upon actuation emit a fine dispersion of solid and liquid in gaseous form.

Q.WHAT IS PROPELLANT?

These are chemical substance which are responsible for developing pressure within a container and expel the product when valve is open. Commonly use propellant are ,isobutene,difluoroethane,chloroflorocarbon etc

Q.WHAT ISINHALATION?

THESE are drugs or solution of drugs administration by nasal or oral respiratory route.

Q.WHAT IS INHALANT?

The drugs or combination of drugs carried into nasal passage by their high vapour pressure.

Q.WHAT IS SPRAY?

These are aqueous or oleaginous solution in form of coarse droplets or finaly divided solid to be applied topically usually to nasal pharyngeal tract or to skin.

Q. ADVANTAGES OF PARENTRAL PREPARATION?

Rapid onset of action
can take by unconscious patient

Use for substance which degrade by oral route.

Solution in volume from ml to liters can given through parentral route

Q. TYPES OF TABLET?

Compressed tablet

These are made of single compression in addition of lubricant, binder ,disintegrant,colorant and flavourant.

MULTICOMPRESSED TABLET

These are tablet that manufacturing by multi compressed

3. FILM COATED TABLET

To mask unpleasant taste of drug a coating is applied .prevent this tablet from GIT rupture.

4. SUGAR COATED TABLET

These are tablet coated by colored or uncoloured sugar solution intended to mask bitter taste of drug.

5. ENTERIC COATED TABLET

These are tablet which are required to disintegrate by stomach acidity these are coated which make the tablet to pass through stomach without disintegration.

6. SUBLINGUAL TABLET

REQUIRED TO place under tongue or in side of cheek e.g:angised tablet

7. EFFERVESCENCE TABLET

THESE TABLET ALONG With active ingredient contain other ingredient like sodium carbonates e.g:cac1000

9.CHEWABLE TABLET

THESE are tablet which require tobe break and chewed in between teeth before ingestion.

10.SUSTAINED RELEASED TABLET

These are tablet after oral administration have prolong action duration of drug e.g:dicloran

Q. PARTS OF CAPSULE SHELL?

1.CAP:slightly large in diameter but shorter in length

2.BODY:shorter in diameter and longer in length.

Q.DEFINE SUPPOSITORIES?

suppositories are solid dosage form of medicament intended for insertion into body cavities other than mouth. They are inserted in rectum ,vagina or urethra they release the product and produce local action.

Q. DEFINE OINTMENT?

These are soft and greasy semi solid preparation intended for application on skin or mucosal membrane.

Q. TYPES OF OINTMENT?

MEDICATED ointment:contain a medicament dissolve suspended or emulsified in base.

Non-MEDICATED ointment: use vehicle for preparation of medicated ointment or can use for their emollient and protective action on skin

Q. DIFFERENCE B/W OINTMENT AND CREAM?

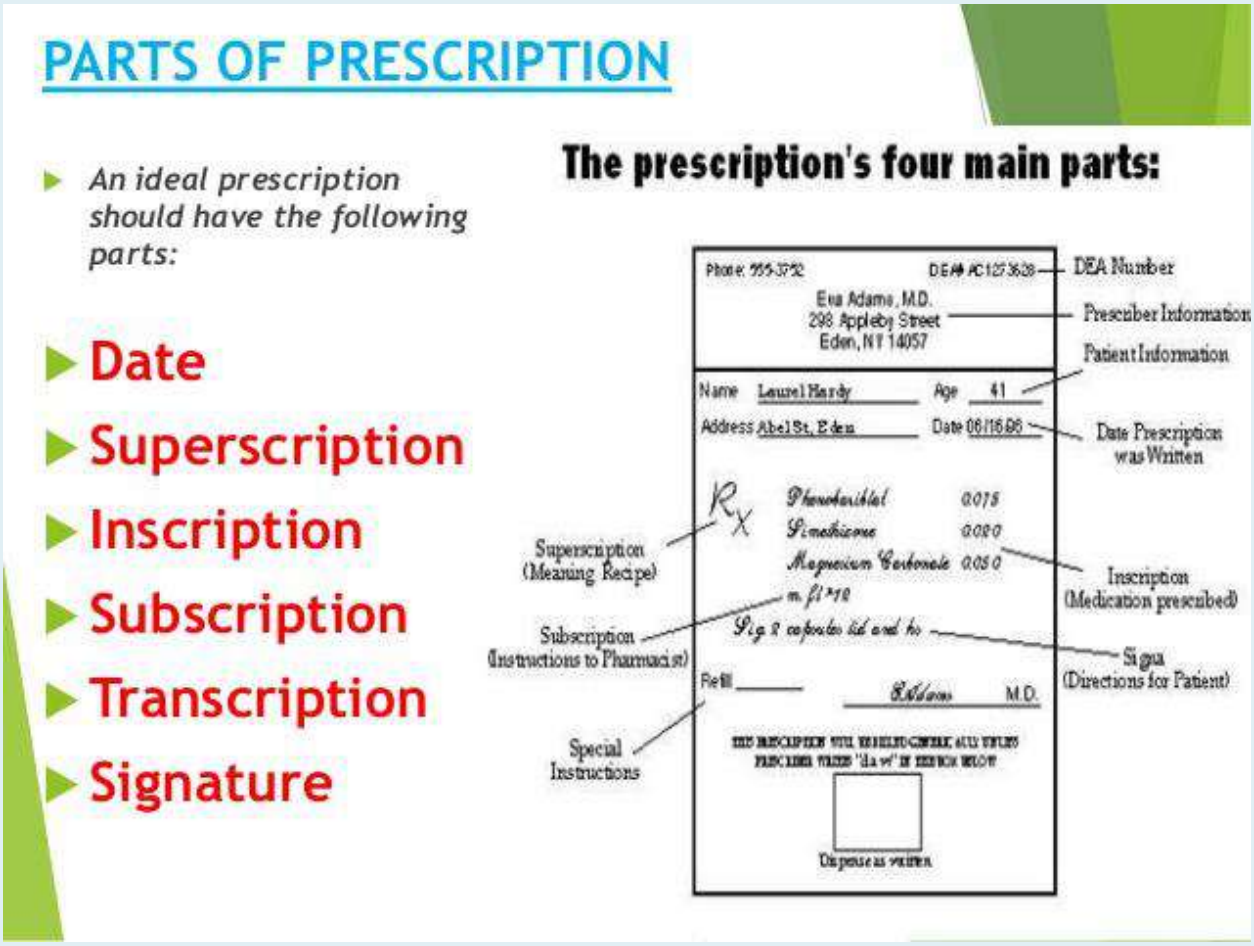
Summary of Ointment & Cream

Parameter	Ointment	Cream
Absorption	Not easily absorbed	Quickly absorbed by the skin
Consistencies	Have thicker consistencies	Have lighter consistencies
Greasiness	More greasy	Less greasy
Transparency	Clear	White
Conc. Of oil	Have a higher concentration of oil	Have a lower concentration of oil than ointment
Spreading ability	Low	High
Stability on skin	Stay longer on the surface	Stay short time on the surface
Healing power	Slow	Fast

Q.Define DISPENSING?

MEDICINE ARE SUPPLIED to individual patient usually in response to prescription.

Q. PRESCRIPTION PARTS?



Q.SYSTEM OF PRICING OF PRESCRIPTION?

SYSTEM 1	P H A R M A C I S T 1 2 3 4 5 6 7 8 9 10 The benefit percentage is 1%

SYSTEM 2	PRICE=cost of ingredient+(cost of ingredient*%markup)
System 3	PRICE= cost of ingredient+(markup +main fee)

Q. DRUG DIVISION ACCORDING TO ITS REFILLING?

GROUP A	Very dangerous drug cannot be refilled e.g:morphine
GROUP B	These are dispensed with prescription which can be refilled e.g:apomorphine
GROUP X	These contain very small amount of dangerous ingredient and can issue without prescription but its record is kept e.g:codex

Q. Types of glass container??

Container Type	General Description	EP Tests	USP Tests Current	USP Tests Proposed
Type I	Borosilicate glass	• Glass grains • Surface glass • Surface etching	• Powdered glass * [Surface glass]	• Glass grains • Surface glass • Surface etching
Type II	Treated soda-lime glass	• Glass grains • Surface glass • Surface etching	• Water attack at 121 °C * [Surface glass]	• Glass grains • Surface glass • Surface etching
Type III	Soda-lime glass	• Glass grains • Surface glass	• Powdered glass * [Surface glass]	• Glass grains • Surface glass

* [Surface glass] Test is present but does not define glass Type

Q. TOTAL PARENTRAL NUTRITION?

THE method of administration enough basic nutrients to achieve active tissue synthesis and growth via parentral route.

Q .DIFFERENCE B/W TERMINAL AND A SEPTIC STERLIZATION?

TERMINAL STERILIZATION

IN THIS WE FILL A container seal it and than sterilized it .whenever ,possible products intended to be sterilized it should preferably terminally sterilized by heat in their final container.

ASEPTIC PROCESS

THE product are packed in sterile container in a way maintained sterility.

Q. DEFINE INCOMPATIBILITY?

The change occur in the quality of a preparation as a result of prescribing or mixing the substance which opposite each other and an undesirable product is formed which may effect the safety ,purpose or apparence of preparation.

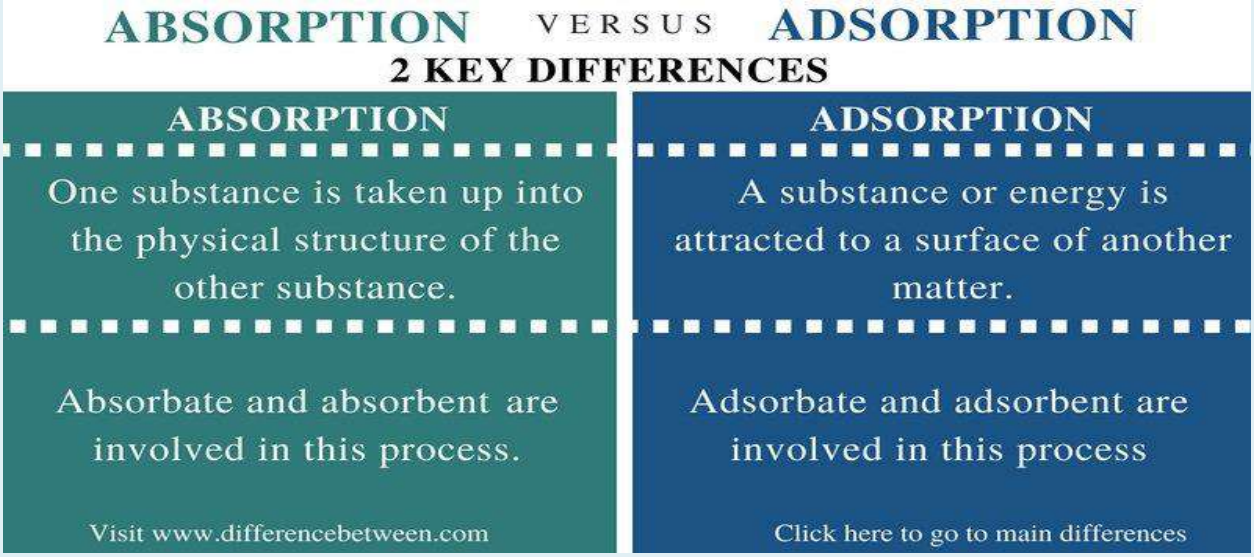
Q.Gelatinization?

Mixture of solid sometime liquefy due to absorption of water or released of water of hydration.

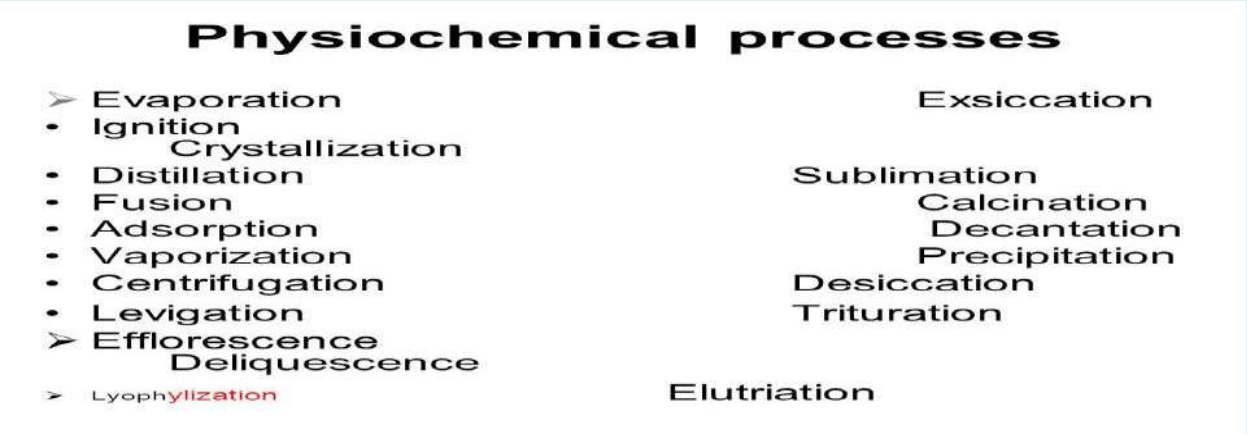
Q. CONTRAINDICATED DRUG?

Prescription call for a drug to which patient is allergic .patient is still taking a previous prescription which may be contraindicated with new one.

Q. Difference b/w adsorption and absorption?



Q.WHAT IS PHYSICAL PROCESSES?



EVAPORATION

Defination:-

Theoretically,

- "Evaporation means simply vaporization from the surface of a liquid. Vaporization of a liquid below its boiling point is called evaporation."
- Thus, no boiling occurs and the rate of vaporization depends on the diffusion of vapour through the boundary layers above the liquid.

Deliquescence

- Deliquescence is a reverse of efflorescence.
- If a hydrated substance has a lower vapour pressure, than the surrounding atmosphere than the water molecule transfer from the atmosphere to the less hydrated substance to make them more hydrated and to produce a equilbrium.This phenomenon is called deliquescence. e.g.: NaOH

Definition

- Distillation is a method of separating mixtures based on differences in volatility (vapour pressure) of the components in a boiling liquid mixture
- It is a unit operation, or a physical separation process, and not a chemical reaction.
- It is used in pharmacy either to extract volatile active principles from vegetable drugs or to separate volatile substances from less volatile impurities.

TRITURATION

- Process of mixing the amalgam alloy particles with mercury
- Originally, the alloy and mercury were mixed, and was triturated by hand with a mortar and pestle
- Mechanical amalgamation saves time and standardizes the procedure.

What is Sublimation?

- Sublimation is the process where a solid changes phase and turns directly into gas without passing through a liquid phase.

Definition

A stabilizing process in which a substance is first frozen and then the quantity of the solvent is reduced, first by sublimation (primary drying stage) and then desorption (secondary drying stage) to values that will no longer support biological activity or chemical reactions.

Exsiccation

- Exsiccation is the process of removing the water of crystallization from the hydrated crystalline substances by heating and making them less hydrous or anhydrous.

CATCHETS

- Cachets are the solid unit dosage forms of medicamen in which drug is enclosed in tasteless sheet made by pouring mixture of rice flour and water between two hot, polished, revolving cylinders. Water is evaporated and sheet of wafer formed is known is cachet

LEVIGATION

Definition:

"The formation of paste by adding the large amount of water, by reducing the size of particle into fine size, which is to be obtained is known as Levigation."

OR

"Levigation is a process reducing the particle size of a solid by triturating it in a mortar or spatulating it on an ointment slab or pad with a small amount of a liquid or melted base in which the solid is not soluble."

Fusion/melting

- **Definition:** **"The process in which the solid or semisolid is converted into liquid by heating is called as fusion."**
- Fusion is the process by which the solids gets converted into liquids without adding any solvent. It may also be defined as the process of heating the solids until they melt.

Ignition

- **Definition:** **"The process in which synthetic compound or drug is burnt at high temperature on electric furnace to remove the organic substance (carbon) and left behind the inorganic substance (as residue as ash) is called Ignition"**
- **Explanation:** **Known quantity of substance is ignited in silica crucible electric furnace. The substance is ignited at specific temperature for definite time is electric furnace**

Elutriation

-
- Elutriation is a method for separating insoluble solids into different particle sets based on their size, shape and density, using different methods or forces. Normally the forces used for elutriation includes, gravity, buoyancy, electrochemical forces or centrifugal forces.

Dosage forms available for different administration routes

Administration routes	Dosage forms
Oral	Solution, syrup, suspension, emulsion, gel, powders, granules, capsules, tablets
Rectal	Suppositories, oitments, creams, powders, solutions
Topical	Ointments, creams, paste, lotions, gel, solutions, topical aerosols
Parenteral	Injection (solution, suspension, emulsion forms), implants, irrigation and dialysis solutions
Respiratory	Aerosols (solution, suspension, emulsion, powder forms), inhalations, sprays, gases
Nasal	Solutions, inhalations
Eye	Solutions, creams, ointments
Ear	Solutions, suspension, creams, ointments

Q. WHAT IS CENTRIFUGATION?

The process of separation lighter portion of a solution ,mixture or suspension from the heavier portion

Q. WHAT IS Ultracentrifugation ?

The high centrifugation speed is 70,000 rpm .

Difference between mass and Weight

- Mass
- Measure of the amount of matter in an object
- Always constant regardless of location in universe
- Measured by balance
- Units expressed kg, g, mg

- Weight
- Measure of gravitational force on object
- Varies depending on objects location to earth (or other large body in space)
- measured using spring scale
- Units expressed in N (Newtons)

Units of measurement

Expression of concentration	Examples of unit
Percentage by mass (w/w)	% (w/w) $\frac{\text{mass solute (g)}}{\text{mass of solution (g)}}$ x100 g per 100g
Percentage by volume (v/v)	% (v/v) $\frac{\text{volume solute (mL)}}{\text{volume of solution (mL)}}$ x100 mL per 100mL
Percentage mass/volume (w/v)	% (w/v) $\frac{\text{mass solute (g)}}{\text{volume of solution (mL)}}$ x100 g per 100mL

BIOCHEMISTRY

1. What type of atoms do carbohydrates contain

- A. Carbon, oxygen, hydrogen
- B. Carbon, hydrogen, nitrogen
- C. Carbon, oxygen, nitrogen

- **2. Chemically most carbs are**:
  - A. Polyhydroxy alderhydes and polyhydroxy thiols
  - B. Polyhydroxy alderhydes and polyhydroxy keytones
  - C. Polyhydroxy keytones and polyhydroxy thiols
- **3. What suffix indicates theat the compound is a carbohydrate**
  - A. Ase
  - B. Rides

- C. Ose

- **4. What is a fisher projection**
  - A. An open chain structure
  - B. A cyclic structure
  - C. Neither
- **5**. Fructose is a
  - A. Aldoses
  - B. Ketoses
  - C. Gycoses
- **6. Glucose and galactose are**
  - A. fats
  - B.carbohydrate
  - C.protein
- **7. When glucose is synthesized in green plants in a process called**
  - A. Gycolysis
  - B. Photosynthesis
  - C. Synthesis
- **8. What is a haworth projection**
  - A. A open chain structure
  - B. A cyclic structure
  - C. Neither
- **10. Furan is a how many membered ring**
  - A. 4
  - B. 5
  - C. 6
  - D. 7
- **11. A Alpha anome is a OH on anomeric C is positioned**
  - A. Up
  - B. Down
  - C. Inside the ring
  - D. Outside the ring
- **12. A beta anomer has the OH on anormeric C positioned**
  - A. Up

- B. Down
- C. Neither

- **13. Amino sugars contain what group instead of a OH group**
  - A. SH2
  - B. NH2
  - C. H2O
- **14**. What is the bond that joins 2 monosaccaride units together Discuss
  - A. PEPTIDE
  - B.GLYCOSIDIC LINKAGE
  - C.NONE OF THEM
- **15.Why is this disaccharide an alpha 1-4 linkage**
  - A. Because the O goes down from the two linked carbons
  - B. Because it contains a O bond
  - C. Neither
  - D. BotH
- **16. Starch is the storage form of glucose in**
  - A. Animals
  - B. Plants
  - C. Both
  - D. Neither
- **17. Starch can be seperated into**
  - A. Amylose and amylopectin
  - B. Amylopectin and glucose
  - C. Amylose and glucose
- **18. Is amylose a**
  - A. Straight chain
  - B. Branched chain
  - C. Both
- **19.Amylopectin is**
  - A. Straight chain
  - B. Branched chain
  - C. Neither

- **20. What forms the fibre like structure of cell walls**
    - A. Starch
    - B. Glucose
    - C. Cellulose
- **21. What is the storage form of glucose in animals**
    - **A. Starch**
    - B.Glycogen
    - C. Glucagon
    - D. Cellulose
- **22. Which of thems is dietary fibre**
    - A. Cellulose
    - B. Starch
    - C. GLycogen
- **23.Which is sweeter d-fructose or D galactose**
    - A. D -frutose
    - B. They are the same
    - C. D - galactose
- **24. What is Galactosemia**

    A. Glucose intolerance

    - B. Fructose intolerance
    - C. Lactose intolerance
- **25. D-galactose, D-glucose, D-fructose are the most abundant**
    - A. Hexoses
    - B. Pentoses
    - C. Tetrose
- **26. What is the process called that produces ATP iin the body**
    - A. Photosynthesis
    - B. Glycolygsis
    - C. Cellular respiration
- **27**. Disaccharides are 2 _____ joined together by a glycosidic bond
    - A. Keytones
    - B. Monosaccharides

- C. Alderhydes
- D. Carboxylic acids

- **28. Maltose is**
  - A. Raw sugar
  - B. White sugar
  - C. Malt sugar
- **29. Lactose is hydrolyzed with which enzyme**
  - A. Amylase
  - B. Lactase
  - C. Sucrase
  - D. Fructase
- **30. Sucrose is made up of**
  - A. D-glucose + D-sucrose
  - B. D-glucose + D-fructose
  - C. D-galactose + D-glucose

31. What element forms the skeleton of organic molecules?

a. hydrogen atoms

b. phosphate atoms

c. carbon atoms

d. water molecules

32. How many bonds can carbon atoms form?

a. two b. four

c. one d. three

33. What happens in a dehydration reaction?

a. molecules are broken apart

b. monomers are bonded together and a water molecule is released

c. atoms are joined

d. it depends on what molecule it is

34. What reactions break apart polymers?

a. hydrolysis reactions

b. dehydration reactions

c. neutralization reactions

d. catalytic reactions

35. What is the general formula for carbohydrates?

a. (CH2O)n b. (C2HO)n

c. (CHCHCH) d. (COOH)

36. In what category of organic molecules are sugars placed?

a. proteins b. lipids

c. hormones d. carbohydrates

37. What are long chains of sugars called?

a. monosaccharides b. disaccharides

c. polysaccharides d. proteins

. How many amino acids are synthesized by our bodies?

A. 10
B. 20
C. 30
D. 40

❖ **. Amino acids which are no synthesized by human body are called**

A. essential amino acids
B. non essential amino acids
C. simple amino acids

D. complex amino acids

❖ **. Amount of amino acid residues in proteins ranges from**

A. 50-2000
B. 2000-4000
C. 4000-6000
D. 7000-10,000

❖ **. Polar amino acids are usually found**

A. on the surface of proteins
B. inside the core of proteins
C. at the sides of proteins
D. can be present anywhere in proteins

❖ . **Number of amino acids that have hydrophobic side chains are**

A. 7
B. 8
C. 9
D. 10

❖ . **Bond formed between two amino acid molecules is**

A. peptide bond
B. sulfur linkage
C. ionic bond
D. coordinate covalent bond

❖ **..the repeating unit of protein are**

A .glucose unit

B.fatty acid

C.amino acid

D.peptides

8.the primary strutcher of amino acid are represented by

A.linear sequence of amino acid joined by peptide bond

B.3-dimension stretcher

C.helical stretcher of protein

D.sub unit strutcher of protein.

- **.peptide bond is**

A.rigid with partially double bond

B.planer,covelant

C.covelant

D.all of above

- **.Enzymes are**

A.amino acid

B.protein

C.lipids

D.DNA stretcher

- **.the most common secondary stretcher is**

A.ALPHA helix

B. beta pleated sheet

C.BETA Plated sheet parallel

- **. tertiary stretcher is maintain by**

A. peptide bond

B. disulphide bond

C.all above

- **.haemoglobin has stretcher**

A.primary

B.secondary

C.tertiary

D.quaternary

- **.3-D stretcher of protein can be determine by**

A. nuclear resonance images

B. x-rays crystallography

C .both a & b

- **.mammalian muscle contain protein**

A. 20% B.40%

C.32% D.17%

- **.no additional hydrogen bond present in---------- stretcher.**

A.primary b.secondary

C.tertiary D.quaternary

- **.amino acid enter on respiratory tract come under ---------- process.**

A.glycolysis b.kreb cycle

C.both D.none of above.

- **.one gram of diatery protein having energy**

A.44.1Kcal B.4100cal

C.both D.none of above

- **.albumin is store in**

A.milk B.egg

C.both D.butter

- **.antifreezing protein is**

A.cassein B.insulin

C.antaractic D.albumin

- **.the osmotic pressure of blood clotting protein.**

A.25-30mmHg B.37-45mmHg

C.34-38mmHg D.all of above

- **The water soluble protein are**

A ALBUMIN B. globulin

C. histidine D .protamine

- **.example of amino acid aromatic side chain is**

A.alanine B.valine

C.tryptophan D.leucine

- **.example of side chain containing hydroxyl group amino acid.**

A.phenylepherine B.tyrosine

C.serine D.tryptophan

- **.amino acid contain sulphur bond**

A.aspartic acid B.methionine

C.glutamic acid D.threonine

- **.non standard amino acids are**

A.citrulline B.ornithine

C.arginosuccinic acid D.all of above

- **.L-DOPA is being used for treatment of**

A.alzheimer B.parkinsonism

C.both D.stomatitis

- **.beans ,nuts ,pulses contain amount of protein**

A.30% B.20%

c.40% D.37%

- **.BETA alanine part of molecule namely**

A.citrulline B.pantothetic acid

C.ornithine D.homocysteine

- **. ---------- store in plant under stress condition**

A.protease B.proline

C. citrulline D. ornithine

NUCLEIC ACID

1. Nucleic acid first derive from nuclei of --------- cell.

A.stem B.muscle

C.bone D.pus

2.Nitrogenous base are component of

A.lipid B.protein

C.amino acid D.DNA

3.**Purine contain nitrogenous base**

A.ADENINE B.guanine

C. all of above D.NONE

4.A nucleotide contain

A.nucleoside B.phosphate

C.both D.NONE

5.Type of RNA are

A.Ribosomal RNA B.mRNA

C. TRNA D.all above

6.DNA is

A.SINGLE HELIX B.double helix

C.BOTH d.none

7.Two molecules in DNA stretcher are

A.parallel B.antiparallel

C.BOTH d.none

8.The repeating unit at interval of

A.3.2nm B.3.4nm

C.3.5nm D.4.5nm

9.Diameter of DNA is

A.2nm B.3nm

C.4nm D.5nm

10.Transfer of instruction from DNA to RNA called

A.Translation B.trancription

C.both D.none

HORMONES

❖ **Which of the following statements about hormones is incorrect**?

A) They are produced by endocrine glands.

B) They are modified amino acids, peptides, or steroid molecules.

C) They are carried by the circulatory system.

D) They are used to communicate between different organisms.

❖ **The secretion of hormone A causes a change in the amount of protein X in an organism. If this mechanism works by positive feedback, which of the following statements represents that fact?**

A) An increase in A produces an increase in X.

B) An increase in X produces a decrease in A.

C) A decrease in A produces an increase in X.

D) A and B are correct

❖ **Which of the following is (are) true?**

A) Hormones regulate cellular functions, and generally negative feedback regulates hormone levels.

B) The circulating level of a hormone is held constant through a series of positive feedback loops.

C) Both lipid-soluble hormones and water-soluble hormones bind to intracellular protein receptors.

D) The ducts of endocrine organs release their contents into the bloodstream.

❖ **Which of the following is a local regulator responsible for activating an enzyme that relaxes smooth muscle cells?**

A) nitric oxide

B) prostaglandin F

C) epinephrine

D) A and B only

❖ **A cell that contains proteins enabling a hormone to selectively bind to its plasma membrane is called a(n)**

A) secretory cell.

B) plasma cell.

C) endocrine cell.

D) target cell

❖ **The hypothalamus controls the anterior pituitary by means of**

A) releasing hormones.

B) second messengers.

C) third messengers.

D) antibodies

❖ **Oxytocin and ADH are produced by the _____ and stored in the _____.**

A) hypothalamus; neurohypophysis

B) adenohypophysis; kidneys

C) anterior pituitary; thyroid

D) adrenal cortex; adrenal medulla

❖ **Which combination of hormones helps a mother to produce milk and nurse her baby?**

A) prolactin and calcitonin

B) oxytocin and prolactin

C) follicle-stimulating hormone and luteinizing hormone

D) luteinizing hormone and oxytocin

❖ **Iodine is added to commercially-prepared table salt to help prevent deficiencies of this essential mineral. Which gland(s) require(s) iodine to function properly?**

A) parathyroids B) adrenal

C) thyroid D) pancreas

❖ **Tropic hormones from the anterior pituitary directly affect the release of which of the following?**

A) thyroxin hormone

B) calcitonin

C) epinephrine

❖ **Which of the following is an endocrine gland?**

A) parathyroid gland

B) salivary gland

C) sweat gland

❖ **Which hormone exerts antagonistic action to PTH (parathyroid hormone)?**

A) thyroxine B) epinephrine

C) growth hormone D) calcitonin

❖ **Which of the following glands shows both endocrine and exocrine activity?**

A) pituitary B) parathyroid

C) salivary D) pancreas

❖ **All of the following are steroid hormones except**

A) androgen. B) cortisol.

C) estrogen. D) insulin

❖ **Which of the following glands is controlled directly by the hypothalamus or central nervous system but not the anterior pituitary?**

A) ovary B) adrenal medulla

C) adrenal cortex D) testis

❖ **If the adrenal cortex were removed, which group of hormones would be most affected?**

A) steroid B) peptide

C) tropic D) amino acid-derived

❖ **The results most likely occurred because progesterone exerts an effect on the**

A) general health of the rat. B) size of the fetus.

C) maintenance of the uterus. D) gestation period of rats.

❖ **Which of the following is secreted by the pancreas?**

A) ecdysone B) glucagon

C) thyroxine D) oxytocin

❖ **Which of the following stimulates and maintains metabolic processes?**

A) ecdysone B) glucagon

C) thyroxine D) oxytocin

❖ **Which of the following stimulates the contraction of uterine muscle?**

A) ecdysone B) glucagon

C) thyroxine D) oxytocin

❖ **Which of the following is secreted by the anterior pituitary?**

A) ecdysone B) glucagon

C) thyroxine D) Growth hormones

❖ **Testosterone is an example of**

A) an androgen. B) an estrogen.

C) a progestin. D) a catecholamine

❖ **Epinephrine is an example of**

A) an androgen. B) an estrogen.

C) a progestin. D) a catecholamine

❖ **Which of the following hormones is incorrectly paired with its action?**

A) oxytocin□stimulates uterine contractions during childbirth

B) thyroxine□stimulates metabolic processes

C) insulin□stimulates glycogen breakdown in the liver

D) ACTH□stimulates the release of glucocorticoids by the adrenal cortex

❖ **An example of antagonistic hormones controlling homeostasis is**

A) thyroxine and parathyroid hormone in calcium balance.

B) insulin and glucagon in glucose metabolism.

C) progestins and estrogens in sexual differentiation.

D) epinephrine and norepinephrine in fight-or-flight responses.

❖ **The main target organs for tropic hormones are**

A) muscles. B) blood vessels.

C) endocrine glands. D) kidneys.

ENZYME

- **If enzyme change active site rate of reaction will**

A. decrease
B. increase
C. remains same
D. Fluctuate

- **Water soluble vitamins contain high proportion of**

A. electronegative oxygen
B. nitrogen atoms
C. both A and B

- **While bound to active site, substrate is converted into the**

A. product of the reaction
B. a complex
C. another substrate of high energy
D. all of above

- **Enzyme which helps in changing shape of molecule is called**

A. ligases
B. dehydrogenases
C. hydrolases
D. isomerases

- **the non-protein part of enzyme is called**

A.CO-enzyme

B. Cofactor

C .both

- **The catalytic activity of an enzyme is restricted to its small portion called**

  (A) Active site
  (B) Passive site
  (C) Allosteric site
  (D) All Choices are correct

- **An activated enzyme made of polypeptide chain and a co-factor is**
  (A) Coenzyme
  (B) Substrate
  (C) Apoenzyme
  (D) Holoenzyme

- **Koshland in 1959 proposed**
  (A) Fluid mosaic model
  (B) Induce fit model
  (C) Lock and key model
  (D) Reflective index model

- **Enzymes are largely _____ in their chemical nature.**
  (A) Lipids
  (B) Steroids
  (C) Protein
  (D) All A, B and C

- **Who proposed "lock and key" model to study enzyme – substrate interaction?**
  (A) Koshland (1959)
  (B) Wilhelm Kuhne (1878)
  (C) Fischer (1898)
  (D) None of these

- **In human body the optimum temperature for enzymatic activities is**

  (A) 37oC
  (B) 40oC
  (C) 25oC
  (D) 30oC

❖ **Optimum pH value for pepsin is**

(A) 5.5
(B) 7.4
(C) 4.1
(D) 1.4

❖ **Competitive inhibitors stop an enzyme from working by**
(A) Changing the shape of the enzyme
(B) merging with the substrate instead
(C) blocking the active site of the enzyme
(D) combining with the product of the reaction

❖ **The enzymes are sensitive to**
(A) Changes in pH
(B) Changes in temperature
(C) Both A and B
(D) None of thes**e**

❖ **Enzyme B requires Zn2+ in order to catalyze the conversion of substrate X. The zinc is best identified as a(n):**
(A) Coenzyme
(B) Activator
(C) Substrate
(D) Product

❖ **The enzyme minus its coenzyme is referred to as the**
(A) Iso-enzyme
(B) Metalloenzyme
(C) Apoenzyme
(D) All of these

❖ **The "lock and key" model of enzyme action illustrates that a particular enzyme molecule**
(A) forms a permanent enzyme-substrate complex
(B) may be destroyed and resynthesized several times
(C) interacts with a specific type of substrate molecule
(D) reacts at identical rates under all conditions

❖ **Consider this reaction. A + B --> C + D + energy.**

(A) This reaction is exergonic
(B) An enzyme could still speed the reaction
(C) A and B are reactants; C and D are products
(D) All of these are correct

❖ **An inhibitor that changes the overall shape and chemistry of an enzyme is known as a(n)**
(A) Auto-steric inhibitor
(B) Competitive inhibitor
(C) Steric inhibitor
(D) Noncompetitive inhibitor

❖ **Non-protein components of enzymes are known as**
(A) Coenzymes
(B) Activators
(C) Cofactors
(D) All A, B, and C

❖ **The minimum amount of energy needed for a process to occur is called the**
(A) Minimal energy theory
(B) Process energy
(C) Kinetic energy
(D) Activation energy

❖ **A student conducts an experiment to test the efficiency of a certain enzyme. Which would probably not result in a change in the enzyme's efficiency?**
(A) Adding an acidic solution to the setup
(B) Adding more substrate but not enzyme
(C) Increasing temperature of solution
(D)All a, b, & c change enzyme's efficiency

❖ **Enzymes function as**
(A) Organic catalysts
(B) Inorganic catalysts

(C) Inhibitors
(D) All of these

- A catalyst is a chemical involved in, but not _____ by, a chemical reaction.
  (A) Supported
  (B) Changed
  (C) Controlled
  (D) All of these
- Many enzymes function by _____ theactivation energy of reactions.
  (A) Increasing
  (B) Promoting
  (C) Lowering
  (D) Both A and B
- An un catalysed reaction requires a
  (A) Higher activation energy
  (B) Lower activation energy
  (C) Balanced activation energy
  (D) All of these

- It suggests that the binding of the substrate to the enzyme alters the structure of the enzyme, placing some strain on the substrate and further facilitating the reaction.
  (A) Lock and Key hypothesis
  (B) Induced fit hypothesis
  (C) Fischer's hypothesis
  (D) D.D. Wood's hypothesis

- They are non-protein organic molecules bound to enzymes near the active site.
  (A) Activators
  (B) Coenzymes
  (C) Holoenzymes
  (D) All of these
- The first step in any reaction catalysed by an enzyme is the formation of a specific association between the molecules called an
  (A) Enzyme-product complex
  (B) Enzyme-intermediate complex

(C) Enzyme-substrate complex
(D) None of these

The function of competitive inhibitors is defined by their ability to interact or bind to

(A) The active site of an enzyme
(B) Regulatory sub-units of an enzyme
(C) Non-competitive inhibitor
(D) Enzyme cofactors

- **Which one inactivates an enzyme by indirectly changing the shape of the active site of an enzyme**

(A) Non-competitive inhibitor
(B) Competitive inhibitor
(C) Coenzyme
(D) Activator

- **The enzymes are classified into**

(A) Five groups
(B) Three groups
(C) Six groups
(D) Four groups

- **Non-proteinaceous part of holoenzyme is**

(A) Prosthetic group
(B) Apoenzyme
(C) Tubulin
(D) None of these

- **Enymes are highly specific for a given substrate which is due to the shape of their**

(A) Active site
(B) Allosteric site
(C) Non-competitive site
(D) None of these

The name enzyme was suggested in 1878 by the German physiologist

(A) Wilhelm Kuhne
(B) Koshland
(C) Fischer
(D) Paul Filder

- **Proteinaceous part of holoenzyme is**

(A) Prosthetic group
(B) Apoenzyme

(C) Lecithin
(D) None of these

❖ **The "lock and key hypothesis" attempts to explain the mechanism of**
(A) vacuole formation
(B) pinocytosis
(C) sharing of electrons
(D) enzyme specificity

VITAMIN

1. **Deficiency of Vitamin K can cause the risk of ?**

(A) Night Blindness

(B) Beri Beri

(C) Color Blindness

(D) Uncontrolled Bleeding

2. Good Source of Vitamin K found naturally are .

(A) vegetables

(B) Beans and Soybeans

(C) Eggs, Strawberries and Meat.

(D) All of the above

3. Signs of Vitamin C Deficiency are

(A) Fatigue

(B) Muscle Weakness

(C) Both A & B

(D) None of These

4 . Best source of Vitamin C are .

(A) Oranges

(B) Chili Peppers

(C) Strawberries

(D) Pineapple

5. Deficiency of Vitamin C causes .

(A) Back Pain

(B) Night Blindness

(C) Muscle Pain

(D) Scurvy

6. Deficiency of Vitamin A causes

(A) Poor Eye Health

(B) Premature Skin Damage

(C) Respiratory Infection

(D) All of the above

7. Best Source of Vitamin A is .

(A) Beef Liver

(B) Carrot

(C) Beans

(D) None of These

8. Vitamin B helps the body in

(A) maintaining cell health

(B) maintaining good eye sight

(C) maintaining your skin smooth

(D) none of these

9. Best Source of Vitamin B-12 are

(A) Citrus fruits

(B) Green Chillies

(C) Eggs

(D) Beans

10. Best Source of Vitamin B-6 ?

(A) Chickpeas

(B) Tuna

(C) whole grains

(D) All of the above

11. Vitamin B-1 is also called .

(A) Riboflavin

(B) Thiamin

(C) Both of the above

(D) None of These

12. Vitamin B-2 is also called

A. Riboflavin

B. Vitamin B-6

C. Vitamin B-12

D. None of These

13. Vitamin B-9 is also called ?

A. Folic Acid

B. Citric Acid

C. Hydrochloric Acid

D. None of The

14. Vitamin B-3 mainly helps in

(A) Maintaining neurological benefits

(B) Maintaining eye sight

(C) Both of the above

(D) Converts food into enegry .

15. Vitamin B-2 helps in maintaining

(A) Skin tissues

(B) Bone Health

(C) Eye Sight

(D) None of these

16. Good Source of Vitamin B-3 is

(A) Chicken

(B) Lemon

(C) Beef

(D) Mutton

17. Vitamin B-3 helps in _____.

(A) Digestion

(B) reducing birth affects

(C) Both of the Above

(D) None of these

Which of following is not included in fat soluble vitamins?

A. Vitamin A
B. Vitamin D
C. Vitamin E
D. Vitamin B

How many types of vitamins are there?

A. Two
B. Three
C. Four
D. Five

Anemia, bleeding gums and tongue inflammation are caused by deficiency of

A. Vitamin A
B. Vitamin B
C. Vitamin C
D. Vitamin D

What happens if water soluble vitamins are taken in excess?

A. They cause harm
B. They are readily excreted from the body
C. Both A and B

D. None of these

- **Which of following is included in fat soluble vitamins?**

A. Vitamin A and C
B. Vitamin A, D,E and K
C. Vitamin B and C
D. Vitamin A and B

- **Which of the following is NOT a function of Vitamin A?**

a. Vision b. Immune function

c. Cell production and differentiation

d. Reproduction e. Blood clotting

- **The most common storage form of iron is known as**:

a. Transferrin b. Hemosiderin

- **Which of the following is NOT a function of water?**

a. pH balance (acidity vs. alkalinity)

b. Body fluids

c. Chemical reactions

d. Cooling

- **Fat soluble vitamins are stored mainly in…**

a. Bones b. Body Fat

c. Muscle d. Kidneys

- **General feeling of irritability and tiredness may be due to lack of**

A. proteins
B. carbohydrates

C. fats
D. vitamins

❖ **Diseases like rickets, scurvy and beriberi occur due to deficiency of**

A. amino acids
B. carbohydrates
C. lipids
D. vitamins

❖ **Disease arising due to vitamin deficiency is called**

A. scurvy
B. beriberi
C. rickets
D. kwashiorkor

❖ **Processed foods generally lack**

A. fiber
B. minerals
C. starch
D. vitamins

1. a	2. b	3. a	4. a	5. b
6. b	7. b	8. a	9. b	10. a

11. a	12. b	13. b	14. b	15. a
16. b	17. a	18. b	19. d	20. a
21. b	22. a	23. a	24. b	25. b
26. b	27. b	28. b	29. c	30. b
31. b	32. a	33. a	34. d	35. c
36. a	37. a	38. a	39. a	40. c
41. a	42. c	43. a	44. d	45. b
46. a	47. c	48. d	49. c	50. b
51. c	52. b	53. c	54. c	55. c
56. a	57. a	58. c	59. c	60. b
61. d	62. b	63. b	64. b	65. b
66. d	67. d	68. c	69. c	70. d
71. b	72. b	73. b	74. a	75. b
76. d	77. a	78. a	79. a	80. d
81. a	82. a	83. b	84. c	85. a
86. a	87. d	88. d	89. d	90. b
91. a	92. c	93. b	94. c	95. d
96. d	97. a	98. d	99. c	100. b
101. c	102. a	103. c	104. a	105. d
106. c	107. a	108. d	109. b	110. c

111. c	112. a	113. d	114. c	115. c
116. b	117. c	118. c	119. d	120. d
121. d	122. a	123. d	124. d	125. b
	126. a	127. a	128. b	129. b
	130. c	131. a	132. b	133. c
	134. a	135. a	136. a	137. b
	138. d	139. d	140. d	141. a
	142. a	143. d	144. d	145. a
	146. a	147. c	148. d	149. b
	150. a	151. a	152. d	153. c
	154. a	155. d	156. a	157. c
	158. b	159. b	160. b	161. a
	162. c	163. a	164. d	165. d
	166. a	167. d	168.	169.

SHORT QUESTIONS

1. **What are carbohydrates? Why are they called hydrated carbons? –**

Ans: Carbohydrates are polyhydroxy aldehydes or ketones. Carbohydrates are sugars and their polymers. They are composed of carbon, hydrogen and oxygen. The word carbohydrates literally mean hydrated carbons. The ratio of hydrogen and oxygen is the same, as in water, i.e. 2:1.

2. **Give three importances of carbohydrates.**

Ans: They form different structures, like cellulose of wood.

cotton, and papers. They are found in all organisms. They are present in all pails of the cells. They act as storage compounds like **starch** and **glycogen.**

3. **Give sources of carbohydrates.**

Ans: Carbohydrates are also called **isaccharides`.** The word saccharide is derived from a Greek word **ssakcharon'.** It means sugar. Saceharide is taken as unit (monomer)

of carbohydrates.

4. **Differentiate between aldo and keto sugars. Ans:** The sugars with aldehyde groups are called **aldo-sugar** and with the sugar with keto groups are called **keto-sugars.** Theexample of aldo sugar is glucose And example of keto sugar is fructose.
5. **What are monosaccharides? Write their general formula?**

Ans: Monosaccharides are simple sugars.Mono means single and sacchar means sugar. They are composed of single sugar unit. Their formula is multiple of CI-120. They generally contain carbon number from 3 to 7.

6. **Draw formula of glucose and ribose.**
7. **What are Sucrose and lactose?**

Ans: **It** is a disaccharide, formed tw linking a molecule of glucose

to a molecule of fructose. Glucose molecule bonds to another monosaccharide. galactose and it forms disaccharide lactose (cornmonly called in ilk sugar).

8. **Differentiate between Amylose starch and Amylopectin.**

Ans: Amylose starch is a simple form of starch. Amylose have unbranched chain of glucose. It is soluble in hot water. Amylopectin is most complex form of starch. It has branched chains. It is insoluble in hot or cold water.

9. **What is glycogen? Give its function.**

Ans: Glycogen is a polymer of glucose. It is more extensively branched than the amylopectin of plants. It is also called **animal starch.** It is a chief storage compound of animals. It is found in liver and muscles. It is also found in all animal cells. It is insoluble in water. It gives red colour with iodine. It gives glucose on hydrolysis.

10. **What is chitin? Give its function.**

Ans: **Chitin** is another structural polysaccharide. Chitin is found in

cell wall of fungi. It also forms exoskeleton of Arthropods. Chitin has amino sugars in its molecules.

11. **What are lipids?**

Ans: t.ipids are nonpolar organic molecules that are insoluble in

polar water but soluble in nonpolar organic solvents like ether, alcohol, and chloroform.

2. **What is fatty acid? Give their importance.**

Ans: Fatty acids contain long hydrocarbon chains bonded to carboxyl (C001-1) . Glycerol is a three-carbon alcohol, with each carbon hearing a hydroxyl (01-1) group. Three fatty acid molecules combine with one glycerol molecule. They are attached to the three carbon atoms in the glycerol backbone.

3. **What are neutral fat?**

Ans: The fats with three Fatty acids are called **triglyceride neutral fat or triacylglycerol.** The glycerol portion of every fat molecule is the same. but there are many kinds of fatty acids. Therefore, there are many kinds of fats. Fatty acid molecules differ in the length of their carbon chains and in the ways

the carbon atoms combine. The most common arc even-numbered chains of 14 to 20 carbons.

4. **What are unsaturated fatty acids? Give their function.**

Ans: They have double bonds. Their chains bend at the double bonds. So the fat molecules cannot align closely with one another. Therefore, they hay e low. melting, points. Thus the fat may be fluid at room temperature. **A liquid fat is called oil.** Most plant fats are un saturated. Fatty acids with one double bond are monounsaturated. They fatty acids with numerous double bonds are poly.- unsaturated.

5. What are saturated fatty acid?

Ans: Saturated fatty acids do not have double bonds. Animal fats are often saturated. .[hey occur as hard or solid fats. In this case, the carbon atoms join by single carbon-carbon bonds. Each carbon atom binds to many hydrogen atoms.

6. What are phosphol lipids?

Ans: A phospholipids molecule is similar to a fat molecule. It contains a glycerol portion and fatty acid chains. Rut phospholipids have only two fatty acid chains. The nitrogen containing groups replace the third chain.

7. What are waxes? Give example.

Ans: The mixture of long chain alkalies (with odd number of carbon from $C1_5$ to ($'_5$). alcohols, ketones, and esters of long chain fatty acids is called waxes. e.g. cutin.

8. Give functions of cutin.

Ans: Some lipids provide insulation against atmospheric heat and cold. They also act as water proof material. For example. waxes in the exoskeleton of insects. A wax cutin forms an additional protective layer on the cuticle of epidermis of some plant organs like leaves, fruits, seeds etc.

9. What are proteins? Give their components.

Ans: Proteins are polymers of amino acids. The name of proteins is derived from the Greek word called *proteios.* It means first place. Proteins always contain atoms of carbon, hydrogen. nitrogen. ox) gen, and sometimes sulfur. Proteins are composed of more than 50% of the dry weight of most cells.

1. Differentiate between hydrophobic and hydrophilic amino acids.

Ans: Hydrophobic amino acids contain non-polar side chain.
I lydrophilic have polar side chains.

1. What is protein conformation?

Ans: A protein consists of one or more polypeptide chains. These

chains are twisted, wound and folded upon themselves to form macromolecule. This macromolecule has definite three dimensional shapes called conformation. The function of protein depends upon its conformation.

2. Differentiate between primary and secondary structures of proteins.

Ans: 1The linear sequence of amino acids in the polypeptide chains
is called primary structure. The structure formed by folding or coiling of polypeptide chain with the help of hydrogen bonding is called secondary structure.

3. Differentiate between a helix and Pleated sheet.

Ans: A delicate coil of polypeptide chain held together by

hydrogen bonding between every fourth peptide bond is called alpha helix. A sheet of polypeptide chain formed by the folding back and forth of the polypeptide chain is called [3 pleated sheet.

4. Differentiate between tertiary and quaternary structures
of protein.

Ans: The structure of protein formed by folding of helix or sheet into a three dimensional shape is called tertiary structure. The structure formed hy the aggregation of two or more polypeptide chains is called quaternary structure.

5. What is Disulphide bridge?

Ans: Disulphide bridge is formed between
two cysteine amino acids of polypeptide chain. The amino acids with sulthydryl groups on their side chains are called cysteine amino acids. The sulfur of one cysteine bonds to the sulfur of second

6. What is globular protein? How is it formed?

Ans: Globular proteins or spheroproteins are one of the two main .protein classes. It is composed of globelike proteins that are more or less soluble in aqueous solutions. They form colloidal solutions in water. The spherical structure is induced by the proteins primary structure. The non-polar groups are bounded towards the interior of the molecule. But the polar ones are bounded outwards. It allows dipole-dipole interactions with the solvent.

7. **How do protein act as reserved compounds.**

Ans: Most part of the fruits and vegetable is composed of proteins. Thus proteins act as storage compounds. Albumin is stored in egg white. It is Major source of amino acids for developing embryo. Casein is present in milk. It is source of amino acids for baby mammals.

8. **What are exon and interon?**

Ans: the coding portions are called exons and the noncoding (junk) portions are called introns.

9. What is the molecular formula for glucose? How can its structural formula be described?

The molecular formula for glucose is $C_6H_{12}O_6$.

Structurally, glucose is a hexagonal ring formed by one atom of oxygen and five atoms of carbon. A hydroxyl radical and a hydrogen atom are bound to each carbon atom of the ring, except for one of the carbon atoms bound to the oxygen atom of the ring, which binds to a CH_2OH radical. Concerning spatial position, hydroxyl bonds alternate sides.

10. What are monosaccharides, oligosaccharides and polysaccharides?

Monosaccharides are simple carbohydrates molecules that cannot be broken down into smaller molecules of other carbohydrates. Oligosaccharides are carbohydrates made by bond of between a maximum of 10 monosaccharides. Polysaccharides are polymers of monosaccharides made of more than 10 units of such monomers. The most important polysaccharides are cellulose, starch, glycogen and chitin

11. What is the difference between monosaccharides and disaccharides? What are some examples of them?

Monosaccharides are simple carbohydrates molecules that cannot be broken down into other carbohydrates. Glucose and fructose are examples of monosaccharides. Disaccharides are carbohydrates made up of two monosaccharides and which are missing one molecule of water (dehydration). The chemical bond between two monosaccharides is known as a glycosidic bond.

Sucrose (table sugar) is a disaccharide that consists of a bond between one molecule of glucose and one molecule of fructose. Maltose is a disaccharide that consists of two glucose molecules. Lactose (milk sugar) is another disaccharide and it is created by a bond between one molecule of galactose and one molecule of glucose.

12. What are pentoses? What are the roles of pentoses in DNA and RNA molecules?

Pentoses are carbohydrates made up of five carbon atoms.

The DNA molecule is made up of a sequence of molecules called nucleotides. Each nucleotide is formed by the bonding of a pentose called deoxyribose with phosphoric acid and a nitrogenous base (A, T, C or G). RNA is also formed by a sequence of nucleotides. RNA nucleotides are made through the bonding of one ribose (a pentose) molecule with one phosphoric acid molecule and one nitrogenous base (A, U, C or G).

Therefore, pentoses are fundamental components of DNA and RNA.

13. What are the main biological functions of polysaccharides?

Polysaccharides have an energy storage fu1nction and a structural function. Polysaccharides ingested by living organisms in the food chain are important sources of carbohydrates for the energetic metabolism of organisms of the next trophic levels.

Starch is the polysaccharide that plants use to store energy. Glycogen is a macromolecule responsible for the storage of glucose in the liver and muscles. Chitin is a polysaccharide with structural functions and which composes up the exoskeleton of arthropods and the cell wall in fungi.

14. What foods contain carbohydrates?

Answer: You can find carbohydrates in a wide variety of foods, including...

- **Grains and grain products**
- **Fruits**

- Vegetables
- Beans and legumes
- Dairy products
- Sugars

15. Give examples of polysaccharide?

Cellulose: most abundant on earth present in plant cell wall.

Starch : it store food material in plants in corn grains etc.

Glycogen: it mainly occur in animal muscles.

Starch: it occur in grains,seed and tubes

Type: 1.amylose 2.amylopectin

1. Describe lipids.

Lipids are a class of organic compounds that are insoluble in water. Simply put, lipids are non-polar and so cannot mix with water. However, lipids are soluble in other lipids and some organic solvents like chloroform, benzene, and ether.

2. What are the major functions of lipids?

Lipids are a long-term storage compound for chemical energy. High in calories, lipids are an energy concentrate, perfect for keeping mobile animals streamlined. Plant oils are mostly found in the seed. The parent plant stores, not only a good supply of starch for its developing embryo, but also some lipid to keep it well fed during germination and early growth. Lipids are poor

conductors of heat, making them fantastic insulators. Most animals have a layer of subcutaneous fat but marine mammals have inches of insulating blubber that keep them warm in cold ocean waters. Lipids cushion organs. Our underlying muscles are protected by lipids.

3. What kinds of lipids are there?

Lipids are a diverse group of compounds. The most familiar lipids are the neutral fats: animal fats and plant oils. Other lipids include steroids, phospholipids (a lipid of universal importance in every cell), waxes, terpenes, and prostaglandins.

4. Describe the monomer and polymer of the neutral fats?

The monomers of the neutral fats are glycerol and fatty acid. Glycerol is a 3-carbon alcohol that serves as the backbone of a neutral fat molecule. Fatty acids are long chains of carbon and hydrogen. Fatty acids are the energy store of the neutral fats. They are hydrocarbons, meaning lots and lots of high energy carbon-to-hydrogen bonds. At the end of the fatty acid is an ester that will bond to the glycerol.

5. What is the difference between fats and oils?

Fats are from animal sources, solid at room temperature, and are saturated. Oils usually come from plants, stay liquid at room temperature, and are

unsaturated. 6. Explain the difference between saturated and unsaturated fats. The difference between saturated and unsaturated fats is due to two types of carbon bonding and the resultant change in the number of hydrogen atoms in the fatty acid chains. Saturated fats have fatty acid chains where each carbon is bonded to the carbons on either side by single covelant bond.

6. . What is the difference between a monounsaturated and a polyunsaturated fat?

When there is only one double bond in each fatty acid, the fat is monounsaturated. Olive oil is mostly monounsaturated fat. If the fatty acids have more than one double bond, it is polyunsaturated. Canola oil is mostly polyunsaturated fat.

7. Why are unsaturated fats considered healthier?

It has to do with the calorie content. The carbon-hydrogen covalent bond is packed with energy. The more of these bonds in a molecule, the more calories in the molecule has. Since saturated fats have a maximum number of carbon-hydrogen bonds, they have the most calories. In our calorie-conscious times, saturated fats are super energy rich. So when choosing a lower calorie fat, unsaturated is a healthier choice.

8. .Compare the energy content of fats, carbohydrates, and proteins.?

F Fats have the greatest calorie content at a whopping 9 Calories per gram. Carbohydrates and proteins only have 4 Calories per gram a piece.

9. .Describe phospholipids?

A phospholipid is similar in structure to a triglyceride. There is a glycerol backbone, two fatty acid chains bonded to the glycerol. But instead of a third fatty acid chain in the mix, there is a phosphate group. Now phosphate is a polyatomic ion: basically a negatively charged molecule made of a phosphorus atom surrounded by oxygen atoms.

10.Define Triglyceride?

Glycerol and fatty acids

The fats and oils that we encounter most frequently such as margarine and cooking oils are triglycerides. They are also called neutral fats because their molecules are not charged. A triglyceride is formedfrom a molecule of glycerol and three fatty acid molecules, joined by condensation.

Which amino acids are considered as acidic amino acids and why?

Answer: Glutamic acid and Aspartic acid are the acidic amino acids due to presence of extra carboxyl group in there side chain. At physiological pH acidic amino acids are negatively charged.

2. What is the zwitter ionic form of α–amino acid?

Answer: Zwitter ion of α–amino acid is ionic form with a positive and a negative formal charge on different atoms and a total net charge is zero.

3. What is peptide bond?

Answer: A peptide bond is a covalent bond that is formed between two amino acid molecules when the carboxyl group of one molecule reacts with the amino group of another molecule, releasing a molecule of water.

4. **How to differentiate between secondary and tertiary structure of proteins?**

Answer: Tertiary protein structure refers to the complete three dimensional folding of a protein. Stabilization of a protein's tertiary structure may involve interactions like hydrogen bonds, Van der Waals interactions, ionic bonds, disulfide bonds between amino acids located far apart along the primary sequence. While in secondary structure segments of polypeptides often fold locally into stable structures that include -helices and β-pleated sheets by forming hydrogen bonds.

5. **What are proteins? How can diversity of proteins in living organisms ?**

The genetic code specifies twenty different amino acids that can compose proteins. Therefore there are numerous combinations of amino acids that can form polypeptide chains, and for this reason, protein molecules can be hugely diverse**.**

6. **What is the importance of proteins for living organisms?**

Proteins play a fundamental role in nearly all biological processes. Due to their diversity, they can take on many different configurations and can play varied roles in cells and tissues.

Some protein functions are worthy noting: they have a structural function (cell membrane proteins, cytoskeleton proteins, connective tissue proteins), an enzymatic function (enzymes are proteins), an energy storage function (proteins can be broken down into acetyl-CoA to "feed" the Krebs cycle), an

osmotic regulation function (albumin), a transportation function (membrane channels, respiratory pigments), an immune protection function (antibodies), a movement function (contractile proteins), an endocrine integration function (hormones) and a informative function (membrane receptors, intracellular signalers).

7. **What is an oligopeptide? How is it different from a polypeptide?**

The peptide molecule is the molecule formed by the bonding of amino acids through the peptide bond. An oligopeptide is a peptide composed of few amino acids (oligo = few). Polypeptides are peptides that contain many amino acids (poli = many), in general more than 50.

8. **Hydrogen bonds are important for protein synthesis.**

– Because hydrogen bonds are needed for the formation of hydride bridges resulting in twisting of protein molecules in their unusual shapes. Many proteins are used in cells as lock and key and thus without a proper shapes, the keys will not fit into the

lock and key and thus without a proper shapes, the keys will not fit into the locks. Ultimately, the proteins will be useless for continuing the process.

CATALYST

What are catalysts?

Catalysts are substances that reduce the activation energy of a chemical reaction, facilitating it or making it energetically viable. The catalyst increases the speed of the chemical reaction.

What amount of catalyst is consumed in the reaction it catalyzes?

Catalysts are not consumed in the reactions they catalyze.

Is there a difference between the initial and the final energy levels in catalyzed and non-catalyzed reactions?

The catalysis does not alter the state of the energy of the reagents and products of a chemical reaction. Only the energy necessary for the reaction to occur, that is, the activation energy, is altered.

What are enzymes? What is the importance of enzymes for living beings?

Enzymes are proteins that are catalysts of chemical reactions. Chemistry shows us that catalysts are non-consumable substances that reduce the activation energy necessary for a chemical reaction to occur.

What are substrates of enzymatic reactions?

Substrates are reagent molecules upon which enzymes act.

Enzymes have spatial binding sites to attach to their substrate. These sites are called the activation centers of the enzyme. Substrates bind to these centers, forming the enzyme-substrate complex.

What are the main theoretical models that try to explain the formation of the enzyme-substrate complex?

There are two main models that explain the formation of the enzyme-substrate complex: the lock and key model and the induced fit model.

In the lock and key model, the enzyme has a region with a specific spatial conformation for the binding of the substrate. In the induced fit model, the binding of the substrate induces a change in the spatial configuration of the enzyme to make the substrate fit.

How does the formation of the enzyme-substrate complex explain the reduction in the activation energy of chemical reactions?

The enzyme possibly works as like a test tube within which reagents meet to form products. Enzymes facilitate this meeting, making it easier for collisions between reagents to occur and, as a result, the activation energy of the chemical reaction is reduced. This is one possible hypothesis.

On what structural level of the enzyme (primary, secondary, tertiary or quaternary) does the enzyme-substrate interaction depend?

The substrate binds to the enzyme at the activation centers. These are specific three-dimensional sites and therefore they depend on the protein's tertiary and quaternary structures. The primary and secondary structures, however, condition the other structures, and consequently are equally important

Why enzyme action is considered highly specific?

Enzyme action is highly specific because only the specific substrates of an enzyme bind to the activation center of that enzyme. Each enzyme generally catalyzes only one specific chemical reaction.

What are the main factors that alter the speed of enzymatic reactions?

The main factors that change the speed of enzymatic reactions are temperature, pH and substrate concentration (quantity).

How does substrate concentration affect the speed of enzymatic reactions?

Initially, as substrate concentration increases, the speed of the reaction increases. This happens because free activation centers of the enzyme bind to free substrates. Once all the activation centers of the available enzymes are bound to their substrates, new increases in the substrate concentration will have no effect on the speed of the reaction

How does temperature affect the action of enzymes on their substrates?

There are defined temperature ranges under which enzymes operate and there is a specific temperature level (optimum temperature) in which enzymes have maximum efficiency. Therefore, temperature variations affect enzyme activity and the speed of the reactions they catalyze.

In addition, because they are proteins, enzymes can be denatured under extreme temperatures.

Does pH affect enzyme activity?

The concentration of hydrogen ions in a solution affects enzyme activity. Each enzyme has a maximum efficiency in an optimum pH.

Since pH is one of the factors in the denaturation of proteins, if an enzyme is subject to a pH level under which it is denatured, there will be no enzymatic activity.

Do enzymes act better under acidic or alkaline pHs?

Most enzymes act under pHs between 6 and 8, a range that corresponds to the general acidic level of cells and blood. There are enzymes, however, that act only under very acid or very alkaline pH. Therefore, enzyme activity depends on pH range.

In the stomach, for example, gastric juice has a very low pH, around 2. Nonetheless, the enzyme pepsin acts to intensively digest proteins. In the duodenum, pancreatic secretions increase the pH of the intestinal juice to allow other digestive enzymes, such as trypsin, to act.

Since pepsin is a gastric enzyme, does it have an acidic or alkaline optimum pH? What happens to pepsin when it enters the duodenum?

Pepsin acts within the stomach so its optimum pH is around 2, an acidic pH. When the enzyme enters the duodenum, it comes in contact with a higher pH and its enzyme activity comes to and end.

What are enzyme cofactors?

Some enzymes need other associated molecules to work. These molecules are called enzyme cofactors and they can be organic ions like mineral salts, or organic molecules, to give some examples.

Inactive enzymes which are not bound to their cofactors are called apoenzymes. Active enzymes bound to their cofactors are called holoenzymes.

What are allosteric enzymes?

Allosteric enzymes are enzymes with more than one activation center and to which other substances, called allosteric regulators, bind.

Allosteric regulators can be allosteric inhibitors or allosteric activators. The interaction between an allosteric enzyme and an allosteric inhibitor prohibits the binding of the substrate to the enzyme. The interaction between an allosteric enzyme and an allosteric activator allows the binding of the substrate to the enzyme and sometimes increases the affinity of the enzyme for the substrate. This regulatory phenomenon of enzyme activity is called allosterism.

TYPES OF VITAMINS:

Vitamin	Chemical Name	Food Sources	Deficiency Diseases
A	Retinol	Milk, eggs, fish, butter, cheese and liver.	Night blindness, Skin dryness.
B1	Thiamine	Legumes, whole grain, nuts.	Beri-beri.
B2	Riboflavin	Egg, milk, cheese, nuts, bread products.	Inflammation of tongue, sores in the corners of the mouth.
B3	Niacin or Nicotinic acid	Meat, fish, pea nuts, whole grain.	skin disease, diarrhoea, depression, dementia.
B5	Pantothenic acid	Eggs, liver, dairy products.	Fatigue, muscle cramp. Pellagra
B6	Pyridoxine	Organ meats, cereals, corn.	Anaemia, kidney stones, nausea, depression.
B12	Cyanocobalamin	Meat, fish.	pale skin, constipation, fatigue.
C	Ascorbic acid	Oranges, tomatoes, sweet and white potatoes.	Scurvy, anaemia, ability to fight infections decreases.
D	Calciferol	Direct sunlight, fish oils, eggs.	Rickets, osteomalacia.

E	Tocopherol	Vegetable oils, olives, tomatoes, almonds, meat, eggs.	Neurological problems, problems of reproductive system.
K	Phylloquinone or Naphthoquinone	Soyabeans, green leafy vegetables, dairy products, meat.	Failure to clot blood.

What are the 8 B-vitamins? What do they do for the body? Why do people need to get b-12 injections? The

B-complex group is water soluble, meaning they dissolve in water and are not stored in the body; they must be replaced every day. The vitamins in the group include thiamin, riboflavin, folate, B-12, niacin, B-6, biotin, and pantothenic acid. The B vitamins help with vision, red blood cell formation, and healthy metabolism and skin. People who exercise a vegan diet might not get

pharmacognosy

- **The Greek word "pharmakon" means**

a)medicine b)drug c)substance

- **the naturally occurring unrefined substance called**

a)drug b)crude drug c)medicine

- **organized and unorganized drug are classification**

a)taxonomical b)morphological c)chemical

❖ **the drug “almod” specie name is**

a)amygdalus b)sinica c)agar

❖ **taxonomical classification include**

a)phylum b)order c)both

❖ **example of anticancer drug are**

a)catechu b)castor oil c)cinnamon bark

❖ **aloe has action**

a)astringent b)purgative c)anticancer

❖ **drug having carbohydrate as chemical constituent are**

a)aloe b)senna c)acacia

❖ **fennel contain**

a)carbohydrate b)glycoside c)volatile oil

❖ **ACEROSE means**

a)acute b)needle c)stem less

❖ **AXIS means**

a)slender b)main stem c)triangular

❖ **GALL cause by**

a)animal b)plants c)insects

❖ **the bark cells are**

a)living b)non-living c)both

❖ **mixture of essential oil and terpenes are called**

a)gum b)resin c)herb

- **the soft juicy ,edible part of fruit is called**

a)pulp b)seed c)bark

- **cinnamon is**

a)bark b)flower c)seed

- **pudina is example of**

a)leave b)bark c)herb

- **stomatal no. is average no of stomata per square**

a)meter b)millimeter c)micrometer

- **to determine elasticity of fiber is ---------- evaluation.**

a)physical b)chemical c)biological

- **to check quality ,quantity and purity of crude drug is**

a)physical b)chemical c)biological

- **living organisms are used the assays are called----------?**

A)matching assay b)biological assay c)multiple assay

- **The enzyme are biological ----------**

a)substrate b)catalyst c)organic substanceic

- **the chemical contain carbon are called**

a)organic b)in organ c)catalyst

❖ **sucrose catalyzed by enzyme**

a)maltase b)sucrase c) ligase

❖ **enzymes can precipitate in**

a)conc.Hcl b)ammonium sulphate c)both

❖ **trypsin act in ---------- medium.**

a)acidic b)basic c)neutral

❖ **pepsin activate at PH of----------**

a)1-2 b)3-4 c)5-6

❖ **optimum temp of enzyme activity is**

a)96-99F b)98-101F c)90-97F

❖ **at temperature 50 c enzymes are**

a)activate b)inactivate c)destroy

❖ **in solid condition enzyme stable at temperature.**

a)50c b)40c c)100c

❖ **milk clotting enzyme is**

a)papain b)bromelain c)nuclease

❖ **molecular wt. of bromelain is**

a)2500mmol b)2800mmol c)2900mmol

❖ **bromelain use in ---------.**

a)cotton b)leather c)milk

❖ **for production of protein enzyme use.**

a)bromelain b)papain c)lactase

- **enzyme use for meat tenderization**

a)lactase b)protease c)bromelain

- **colour of papain is**

a)white b)brown c)yellow

- **the enzyme having incomplete solubility in water and alcohol is**

a)bromelain b)papain c)maltase

- **---------- use to remove protein from contact lenses.**

a)papain b)bromelain c)sucrase

- **lipase hydrolyzed**

a)carbohydrate b)fat c)protein

- **example of proteolytic enzyme is**

a)esterase b)nuclease c)pepsin

- **the enzyme found in liver and soyabean seed is**

a)amindase b)urease c)cellulose

- **enzyme present in intestinal juice is**

a)sucrase b)esterase c)maltase

- **according to new method enzymes named by functional group +----------**

a)ese b)ase c)rse

- **allergy is hypersensitivity disorder of ---------- system.**

a)GIT b)immune c)circulatory

- **antibody nature is ----------**

a)aminoacid b)protein c)lipids

- **allergic rhinitis is allergy of**

a)lungs b)eye c)nose

- **abdominal pain is disease condition of**

a)lungs b)GIT c)skin

- **inhalant allergens are**

a)pollen b)food c)drugs

- **dust mites present in**

a)carpet b)nuts c)milk

- **---------- % of all food allergy cause by peanut,fish,shellfish,egg etc.**

a)80 b)60 c)90

- **chest tightness and itching is symptoms of allergens**

a)contact b)injection c)inhalant

- **cosmetics produce---------- allergy.**

a)contact b)inhalant c)ingested

- **type 1 allergic condition cause by mediators**

a)IgM B)Ig G C)IgE

- **SERUM sickness allergic condition mediated by**

a)histamine b)prostaglandian c)both

- **example of skin test is**

a)scratch test b)patch test c)both

- **duration of scratch test is**

a)5mint b)10mint c)15mint

- **intradermal test for allergy test conc of injected material is.**

a)0.1ml b)0.4ml c)0.3ml

- **in blood testing of allergy is**

a)RAST b)ELISA c)both

- **pharmacotherapy treatment of allergy medication is**

a)antidiuretics b)antihistamine c)antihypertensive

- **the substance separated on basics of relative solubility is**

a)purification b)extraction c)distillation

- **in chromatography material separated on basics of**

a)purity b)polarity c)solubility

- **the solvent moves downward ---------- chromatography.**

A)ascending b)descending c)circular

- **---------- chromatography the substance moves circular form**.

a)cicular b)radial c) descending

- **commonly use stationary phase is**

a)talc b)ethanol c)acetone

- **petroleum ether is example of**

a)stationary phase b)mobile phase c)both

- **Rf value is ratio of Distance cover by substance /distance cover by**

a)solute b)solvent c)water

- **in paper chromatography the distance of paper line from one end is**

a)2.5cm b)3.5cm c)3cm

- **identification of poison is application of ---------- chromatography.**

a)TLC b)HPLC c)paper

- **example of absorbent material**

a)silica gel b)aluminium oxide c)both

- **analyzing ceramides and fatty acid is application of**

a)TLC b)HPLC c)paper chromatography

- **diameter of column in column chromatography is**

a)40mm b)50mm c)45mm

- **length of column in column chromatography is**

a)50mm b)50cm c)50um

- **the waste material left after extraction is**

a)menstrum b)marc c)both

- **---------- is complex pharmaceutical PROCEDURE in which API is produce**.
  a)liquification b)extraction c)melting

- **the extraction technique in which hot menstrum is produce on crude drug is**

a)decoction b)infusion c)percolation

- **maceration process in presence of gentle heat is called**

a)digestion b)percolation c)infusion

- **---------- is boiled with water for given period of time.**

a)infusion b) pecolation c)decoction

- **---------- is not official preparation**.

a)decoction b)maceration c)infusion

- **in maceration of organized drug include ---------- days.**

a)13 b)12 c)7

- **the mistening of crude drug is called**

a)mustication b)imbibition c)fusion

- **drugs cause toxicity in mouth**

a)colcasia esculanata b)arum jacquemontii c)arisaema triphyllum d)all

- **drugs produce blister on tongue**

a)colcasia esculanata b)arum jacquemontii c) both

- **--------- produce dangerous and produce multiple symptoms**

a)aesculus b)lycorine c)podophyllum emodii

❖ **GIT IRRITANT PLANT cause**

a)fever b)swear sneezing c)both

❖ **length of datura stramonium is**

a)5000feet b)9000feet c)both

❖ **fever,vomiting,dryness of mouth cause by**

a)atropa belladonna b)datura stramonium c)both

❖ **intestinal motility and diarrhea cause by**

a)nicotiana tobacum b) atropa belladonna b)datura stramonium

❖ **digitalis purpura cause**

a)vomiting b)hypertension c)both

❖ **cannabis sativa cause**

a)headache b)hallucination c)both

❖ **toxicity of manihot esculenta is**

a)convulsion b)cyanogenocyte c)both

❖ **glycogen and aglycogen is part of**

a)glycerides b)alkaloids c)volatile oil

❖ **chemical constituent sennosides present in**

a)senna b)cassia c)aloe

❖ **drug having liliaceace family are**

a)glycyrrhiza b)aloe c)cassia

❖ **glycyrrhiza synonym is**

a)gwar gandal b)mulethi c)senna

- **leaves of digitalis is dried at temp.**

a)50c b)60c c)45c

- **arrow poision drug is**

a)strophanthus b)digitalis c)glycyrrhiza

- **the substance containg nitrogen compounds called**

a)glycoside b)alkaloid c)both

- **chota chandan is common name of**

a)rauwalfia b)catharanthus c)ephedra

- **common name of catharanthus is**

a)chota chandan b)snake root c)rattanjot

- **family of opium is**

a)papaveraceae b)ephedraceae c)apocynaceae

- **kuchla is common name of**

a)ephedra b)opium c)nux-vomica

- **active constituent of nux-vomica is**

a)vomicine b)brucine c)both

- **drug cause mydriasis**

a)hyoscyamine b)hyosine c)asparagaline

- **anethol ,fenchon is active constituent of**

a)fennel b)saunf c)both

❖ **pudina is common name of**

a)fennel b)peppermint c)carum

eugenol is chemical constituent of

a)cinnamon b)cardamom c)cineol

❖ **myrtaceae is family of**

a)clove b)fennel c)cinnamon

❖ **crude drug use in gall stone is**

a)curcuma longa b)cinnamon c)fennel

❖ **balsam caontain large propotion of**

a)benzoic acid b)cinnamonic acid c)both

❖ **asafetida contain**

a)balsam b)oleoresin c)gum resin

❖ **luban is synonym of**

a)tolu balsam b)Sumatra benzoin c)both

❖ **anti cancer drug is**

a)ephedra b)colocyth c)asafetida

❖ **anti spasmodic drug is**

a)hing b)ginger c)colocythus

❖ **volatile oil present in ginger**

a)gingerol b)zingerone c)shogaols

❖ **ratio of carbon :hydrogen:oxygen is**

a)1;2;1 b)2:3:4 c)3:4:6

- **length of acacia Arabica is**

a)6m b)5m c)10m

- **shape of acacia Arabica is**

a)1-3m b)2-4m c)3-5m

- **the formation of gum in stem process called**

a)gummifer b)gummosis c)both

- **for maize starch preparation temp taken**

a)40c b)50c c)60c

- **chemical constituent of potato starch is**

a)amylose b)amylopectin c)both

- **chemical class of catechu is**

a)tannin b)glycerine c)alkaloid

- **drug use as astringent action is**

a)nut gall b)quercus infectoria c)catechu

- **almod oil having**

a)lipids b)volatile oil c)carbohydrates

- **drug use in eczema are**

a)cinnamon b)almod oil c)caraway

1. b	2. b	3. b	4. a	5. c

6. c	7. c	8. b	9. c	10. c
11. b	12. b	13. c	14. a	15. b
16. a	17. a	18. c	19. c	20. a
21. c	22. b	23. b	24. a	25. b
26. c	27. b	28. a	29. a	30. b
31. c	32. b	33. b	34. b	35. a
36. c	37. a	38. b	39. a	40. b
41. c	42. b	43. c	44. b	45. b
46. b	47. b	48. c	49. b	50. a
51. a	52. c	53. b	54. a	55. c
56. b	57. c	58. b	59. c	60. a
61. b	62. c	63. b	64. c	65. a
66. c	67. c	68. c	69. a	70. c
71. b	72. b	73. b	74. b	75. b
76. a	77. a	78. b	79. a	80. c
81. a	82. c	83. c	84. a	85. b
86. b	87. b	88. b	89. b	90. a
91. c	92. a	93. b	94. d	95. c
96. b	97. c	98. c	99. a	100. a
101. b	102. c	103. c	104. a	105. a

106. b	107. b	108. b	109. a	110. b
111. b	112. a	113. c	114. c	115. a
116. c	117. b	118. a	119. a	120. a
121. c	122. c	123. b	124. b	125. a
126. b	127. a	128. a	129. b	130. b
131. c	132. a	133. a	134. a	135. b

SHORT QUESTION

Q.Define pharmacognosy?

The study of physical,biochemical and biological properties of natural drugs and their chemical constituents. Properties of natural drugs and their chemical constituents. As well as the search for new drugs from natural source.

Q.Define crude drug?

A crude drug is any naturally occurring ,unrefined substance derived from organic or inorganic sources such as plant, animal ,bacterial, organ or whole organisms intended for use in the diagnosis,cure,treatment,or prevention of disease in man or other animals.

Q.Explain morphological classification of drug?

ORGANIZED DRUG

These are drug obtained from direct part of the plant and containing cellular tissues are called as organized drug for example:leaves,bark,root,seed etc.

Unorganized drug

The substance which prepared from plants by physical process such as incision, drying or extraction are called unorganized drug.

DEFINE TERMS

Acerose: needle shape

Capillary: very slender and hair like

Deltoid: broadly triangular in shape

Exudates :A substance exuded or secreted from plant

Gall: an abnormal growth on plant that is caused by insects.

Ovary: the basal portion of pistil where female germ cell develop into seed after germination.

Rhizomes: an underground stem capable of production new stem or plant at its nodes.

Vaginated: provided with or surrounded by sheath.

Pulp: the soft, juicy ,edible part of a fruit is called pulp.

Gum: they are solid that are mixture of polysaccharides .they are water soluble and are in part digestible by humans.

Q.Define stomatal number?

The average no. of stomata per square millimeter of epidermis is known as stomatal number.

Q.What is biological assay? techniques used ?

The scientific experiment carried out on intact animal ,animal preparation ,isolation of living tissues or microorganism.

Techniques use

1 .matching biological assay

2. interpolation biological assay

3. bracketing biological assay

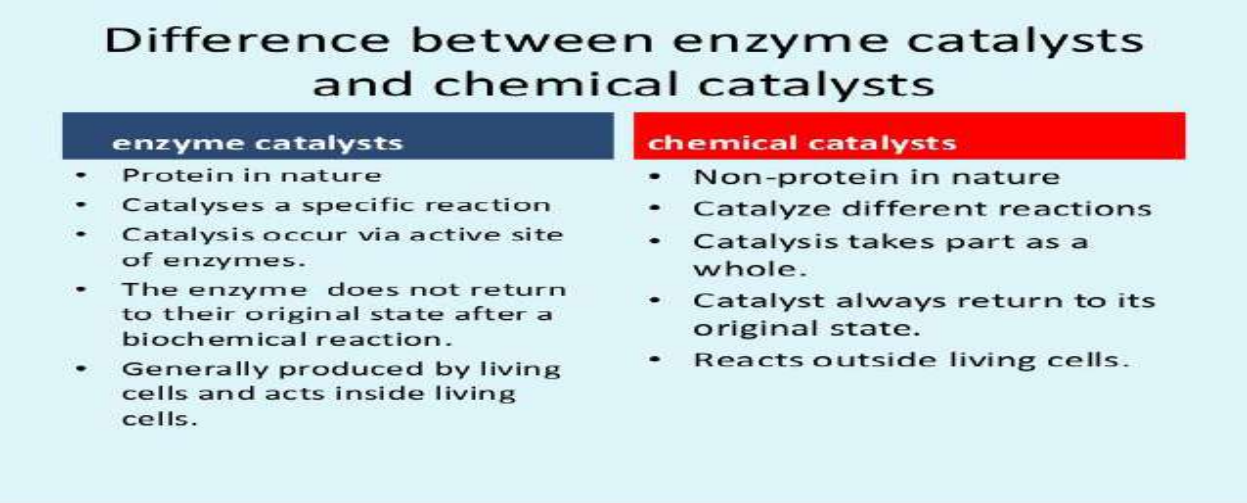
4 .multiple biological assay

Q.Define enzyme?

These are catalyst of biological system that are produce by living cell which capable catalyzing the biological reaction.

SUBSTRATE: The molecule on which enzymes act .

Q



Q .Explain temperature effect on enzyme activity?

At 0c ---------- inactive

10c – 20c ---------- very little active

35 -40c ---------- maximum activity

50c ---------- inactive

60c ---------- destroy

Q.Explain uses of bromelain?

It is used as supporting agent in the treatment of inflammation and edema.

2.it is widely used in leather industries.

3.it used in production of protein

4.effective agent for meat tenderizing.

Q.Explain old classification method of enzymes?

The enzyme are named by adding suffix “ase” to name of substance.

e.g: lipase for hydrolysis of fat and cellulose for hydrolysis of cellulose.

Q.Define hypersensitivity?

The undesirable reaction produced by normal immune system.

Q.Define allergy?

Allergy is specific hypersensitivity of the individual to foreign particles usually protein to which a specific individual is exposed.

Q.Define Antibody?

It is type of protein which released by immune system when it detect harmful substance.

Q.Define antigen?

Harmful substance which effect our body called antigen?

Q.Define Pollen ?

The cell of flowering plant ,including trees ,greases,and weeds .pollen is microscopic size.

Q.What is ingested allergen?

The allergen present in our food stuff .when we eat that contaminated food these allergen are also ingested with food particles.

Q.What is injectable allergy?

Injection of medicine

Insects sting

Example: dizziness, shock, loss of consciousness, difficulty in breathing, chest tightness .

Q. Classification of allergic reaction?

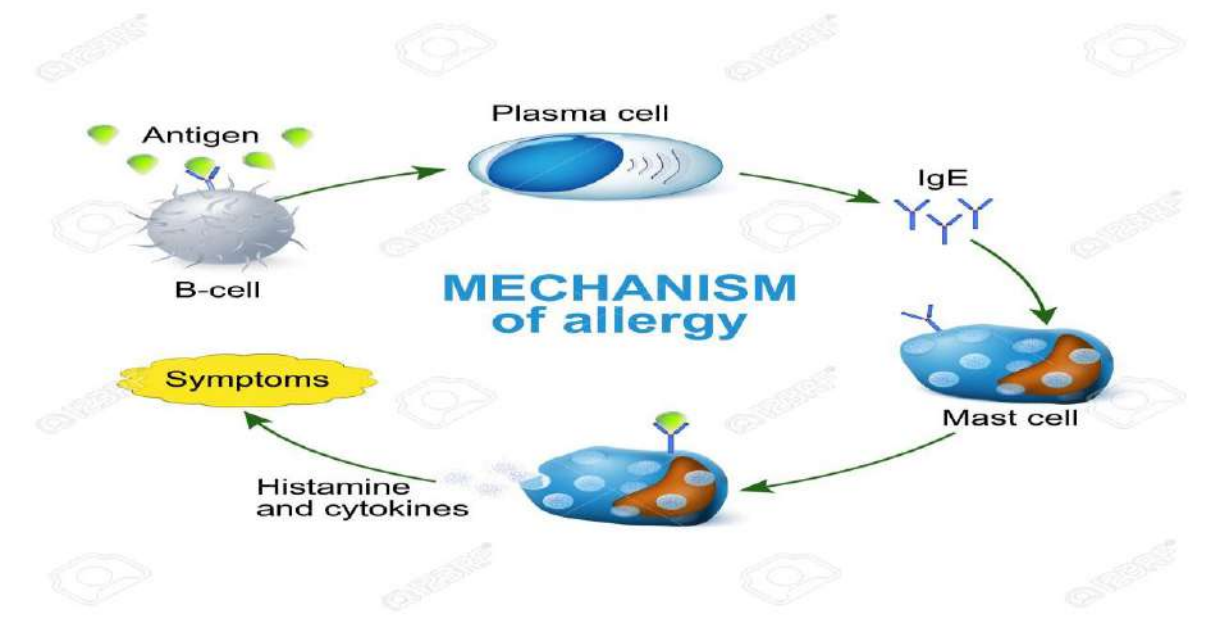
Hypersensitivity Reactions - Types

knowmedge

Mnemonic: "ACID"

Hypersensitivity Reaction	*Description*
Type I **IgE-mediated; quick onset after exposure** **A**llergic	Bee stings Latex Certain medications (e.g. Penicillin)
Type II **Cytotoxic/antibody-mediated** **C**ytotoxic	Hemolytic reactions Goodpasture syndrome Hyperacute graft rejection
Type III **Immune complex/IgG/IgM mediated** **I**mmune complex deposition	Hypersensitivity pneumonitis Systemic lupus erythematosus Polyarteritis nodosa Serum sickness
Type IV **Delayed or cell-mediated** **D**elayed	Chronic graft rejections PPD test Latex Nickel Poison ivy

Q.Explain mechanism of allergy?



Q. Scratch test ?

First scratch the skin

2. Drop solution by sterile needle
3. After 15 mint this test take to develop
4. It use for diagnosis of hay fever.
   Give treatment of allergy?
   Avoidance
   Pharmacotherapy
   Immune theray
   Ans: given page 55-57

Q.Define chromatography?

The process of chemistry in which mixture of different compounds is separated on the basis of their relatives polarity difference.

Q.PHASES OF CHROMATOGRAPHY?

MOBILE PHASE: This phase is a component of chromatographic procedure that is mobile e.g solvent use in paper chromatography?

Stationary phase: this phase components of chromatographic procedure that is non-mobile or fixed is known as stationary phase.

e.g:paper,talc,activated charcoal.

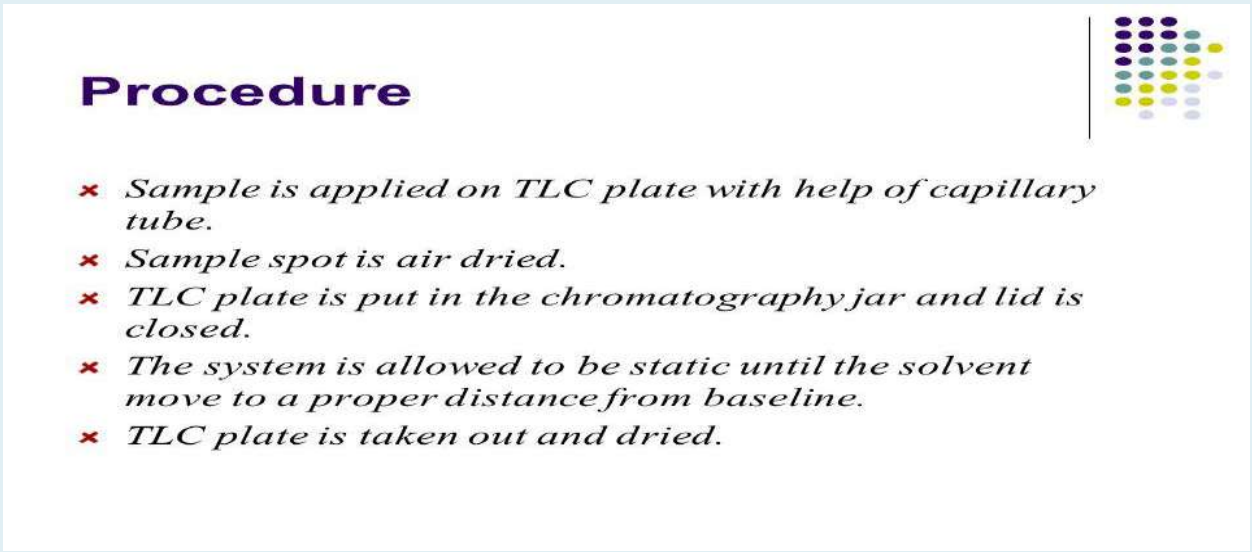
Q.WHAT IS Rf value?

The ratio between distance covered by by any substance to the distance covered by mobile phase.

Rf = distance cover by substance/ distance covered by solvent

Q.Explain procedure of thin layer chromatography?

First of we take special thin layer sheet



Q.Define style of TLC?

1 .Ascending chromatography

2 .Descending chromatography

3 .Circular chromatography

4 .Radial chromatography

Q.Define extraction techniques?

The extraction is a complex pharmaceutical procedure in which the active pharmaceutical ingredient is removed from crude drug by using chemicals.

Q.Explain theory of extraction?

1. Reduce the crude drug upto suitable size

2.Select solvent

3.Penetrate solvent into crude drug

4.Penetration of solvent in crude drug

5.Cell should be at right position to collect to solution

6.Supply of appropriate heat

7.Separation of solvent from mark

8.Extraction technique is applied to get purified solid drug.

Define

Decoction: Drug and water boiled with water for certain are given period of time.

Infusion: hot mentrum is used poured on crude drug or crushed drug and allow them for suitable time.

Maceration: the drug is powdered and placed in paper and dipped in menstrum for 2-14 days as required.

Percolation: the fine powdered of drug are packed in column allow menstrum to percolate through column of packed drug.

Continuous hot extraction:it is process in which soxhelt extractor used and allow to use in hot condition.

Q.DEFINE TOXICITY PRODUCE BY DRUG CAUSE MOUTH,ORAL CAVITY POISION?

Intense burning sensation

Mouth unless

Dermatitis

Blister on tongue

Increase salivation

Loss of voice.

Q. Toxicity of drug cause gastro enteric irritant ?

Inflammation of gastric mucosa

Peptic ulcer

Duodenum ulcer

Inflammation in eye

Vomiting

Headache

Severe sneezing

Q.Toxicity of "ATROPA BELLADONA"?

Dryness of mouth

Muscle relaxation

Fever

Nausea

Vomiting

Q.TOXICITY of"digitalis purpura"?

- Hypertension
- Cardiac arrythmiya
- Ventricular tachycardia
- Increase impulse rate
- Nausea
- Vomiting
- Chest pain

Q.Define glycosides?

These are organic compounds anundant present in plant ,on hydrolysis they yield a sugar component called glycogen and non-sugar component called aglycogen.

Q.Enlist plant contain glycoside?

1.Anthraquinone: senna, aloe ,rhubarb

2.Cardiac glycoside:digitalis,strophanthus

3.saponin glycoside

Q.What is alkaloid?plant contain alkaloid?

Alkaloid are naturally occurring ,nitrogen containing compounds.these are basic in nature and are physiologically active.

Group:

1.pyridine – piperidine (areca nut)

2.tropane alkaloid (hyoscyamus leaf)

3.quinoline alkaloid (cinchona bark)

4.iso-quinoline alkaloid(ipecac,opium)

5.indole alkaloid(nux-vomica)

6.alkaloidal amines(ephedra)

7.steroidal alkaloid(veratrum)

8.purine alkaloid(tea,coffee)

Q.What is volatile oil?

Rapid evaporating oil ,especially an essential oil that does not leaves a stain.

Drug :

- Fennel
- Caraway
- Peppermint
- Cinnamon
- Cardamom

- Clove
- Curcuma

Q.What is resin explain its types?

Resin are solid or semisolid plant exudates formed in schizogenous cavities. They are complex mixture of compound like resin alcohol ,resin acid ,resinophenol.

Balsam

Resinous substance which contain large propotion of benzoic acid or cinnamon acid either free or in combination with their esters .example are tolu balsam.

Q.What is "oleo-gum resin"?

These are associated with gum and volatile oil both .the volatile oil is removed by steam distillation and gum is separated dissolved in water.example is myrrh.

Q.Define medicinal use of "ACACIA "?

- AS emulsifying agent
- As binder
- As demulcent
- As thickner in juices.

Q.Explain collection and preparation of rice starch?

Firstly broke rice are softened by adding in aqueous solution of NaOH then crushed it and mixed with water and to separate starch the solution is kept on standing position then dried at the 50-60c temp.

Q.What is tannin?

These are complex organic ,non-nitrogenous ,pale yellow to light brown amorphous substance widely distribution in plant and used chiefly in tanning leather ,dyeing fabric,and making ink .their solution are acid and have an astringent taste.

Drug

- Catechu
- Nutgall

Q.WHAT IS Fixed oil?

These are esters of glycerol with long chain fatty acid .they are non volatile in nature obtained from plants or animal .

Drug: almod oil

Medicinal uses

- Use for moisturizing skin
- Used as eczema
- As flavoring agent in preparation of toilet articles
- As vehicle for oily injection.
- Mild laxation.


MICROBIOLOGY
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SOCIETY

- **Word “micro” means**
  a)large b)small c)big

- **the word bacteria means**
  a)small animal b)large animals c)little animals

- **coccus shape is**
  a)rod shape b)spherical c)spiral

- **length of rod shape bacteria is**
  a)20um b)20nm c)30nm

- **diameter of cocci is**
  a)0.5um b)1.0um c)both

- **example of streptococci is**
  a)s.lactis b)s.mutans c)both

- **the curved shape bacteria are**
  a)vibrio cholera b)spirillum volutan c)s.aureus

- **except of ---------- all bacteria contain cell wall.**
  a)protoplasm b)mycoplasma c)nucleoplasm

- **the important component of cell wall is**
  a)lipid b)protein c)peptidoglycan

- **width of peptidoglycan is**
  a)30um b)25um c)25nm

- **cell wall contain ---------- % of peptidoglycan**
  a)50-70 b)60-90 c)30-50

- **thickness of cell wall of gram negative bacteria.**
  a)6nm b)4nm c)3nm

- **cell wall of gram negative bacteria having no----------**
  a)amino acid b)teichoic acid c)both

- **the space between membrane and cell wall is ---------- space.**
  a)cytoplasmic b)periplasmic c)both

- **loose layer of capsule is**
  a)glycogen b)glycocalyx c)dextrin

- **prokaryotes having no distinct**
  a)cell membrane b)cell wall c)nucleus

- **the extracellular ring of DNA is called**
  a)ribosomes b)volutin c)plasmids

- **ribosomes are bodies of ---------- & protein**.
  a)DNA b)RNA c)both

- **the depot of phosphate is called.**
  a)plasmid b)ribosomes c)volutin

- **the combination of cell wall and capsule is called**
  a) cell membrane b)cell envelop c)both

- **two layers of phospholipids molecules are**
  a)antiparallel b)parallel c)both
- **---------- change in general health .**
  a)infection b)disease c)both

- **the relationship between the body and its normal flora is an example of a ----------**

a)infection b)disease c)symbiosis

- **E.coli is generally presumed to be a commensal in the huma intestine is example of ----------**

a)mutualism b)commensalism c)symbiosis

- **in vagina ,---------- is noted organism**.

a) E.coli b)lactobacillus c)candida albicans

- **The ability of parasites to gain entry to the host tissue and bring about physiological change**.

a)virulency b)pathogenicity c)mutualism

- **---------- express degree of pathogenicity of parasites**.

a)virulency b)pathogenicity c)pathogen

- **---------- is polysaccharide derived from marine algae.**

a)agar b)nutrient media c)beef broth

- **example of enriched media is**

a)blood media b)chocolate media c)both

- **---------- media inhibit growth of certain bacteria.**

a)blood b)chocolate c)selective

- **straphlococcus are cultivated in---------- media.**

a)blood b)mannitol c)enriched

- **by heating rupture of RBCs than media termed as**

a)mannitol b)blood c)chocolate agar

- **carbohydrate fermented by E.coli and other gram negative bacteria in ---------- media**

a)blood agar b)selective media c)eosin methylene blue agar

- **Mac conKey agar is type of ---------- media.**

a)chocolate b)mannitol salt c)differential

- **function of sodium chloride is to stabilized ---------- environment.**

a)external b)internal c)both

- **function of phosphate in synthetic media.**

a)DNA&RNA SYNTHESIS B)membrane synthesis c)cell plasma synthesis

- **function of glucose in synthetic media is**

a)nucleic acid production b)cell membrane synthesis c)energy providing

- **pure culture consist of population of cells which derived from ---------- cells.**

a)two cell b)multiple cell c)single cell

- **pure plate is use to determine no of microbes per----------**

a)gram b)ml c)both

- **range of CFU is**

a)40-200 b)30-300 c)50-170

- **temp for incubation of media is**

a)30c b)60c c)37c

- **1/10 dilution in which 1ml pure material dissolve in ---------- of media.**

a)8ml b)100ml c)9ml

- **1/10000 is stock of**

a)0.001 b)1ml c)0.0001

- **gram positive bacteria act as gram negative due to ----------**

a)mg.ribonuclease b)mg. ribonucleated c)ca.nucleated

- **nature of cytoplasm is**

a)acidic b)basic c)both

- **the bacteria retain stain due to ---------- of cytoplasm**.

a)acidity b)basicity c)both

- **for fixing of smear we ---------- done.**

a)heating b)cooling c)pass through flame

- **dilute solution of carbofunchsin is**

a)1;3 b)1:10 c)1:100

- **bacteria retain stain due to ---------- layer**

a)carbohydrate b)protein c)waxy

- **in acid-fast staining the counter stain is**

a)alcohol b)picric acid c)safrainin

- **virus is latin word meaning "----------**

a)pure b)poision c)both

- **the intracellular parasites are**

a)bacteria b)viruses c)fungi

❖ **genetic code of viruses is**

a)DNA B)RNA c)both

❖ **the tightly wound coil resembling ----------**

a)spiral b)helical c)helix

❖ **the polyhedron with 20 triangular faces are**

a)helix b)icosahedron c)complex

❖ **the core of nucleic acid of viruses is**

a)cytoplasm b)capsid c)genome

❖ **---------- is protect genome.**

a)capsid b)helix c)icosahedral

❖ **capsid of herpes viruses made of ---------- capsomere**.

a)20 b)160 c)162

❖ **capsid of adenovirus having ---------- capsomere.**

a)120 b)252 c)300

❖ **the flexible membrane of viruses is called**

a)capsid b)envelop c)genome

❖ **the envelop contain functional projection called----------.**

a)envelop b)capsid c)spikes

❖ **a complete assembled viruses outside of its host called**

a)viroid b)virion c) both

viroid are tiny fragment of ----------

a)amino acid b)nucleic acid c)cytoplasm

- **---------- is infectionus protein**

a)viroid b)prion c)virion

- **replication of RNA virus take place in**

a)membrane b)cell wall c)cytoplasm

- **---------- can be immediately translate by host .**

a)negative –sense b)positive sense c)both

- **coding strand is ---------- to mRNA**.

a)parallel b)anti-parallel c)complementary

- **formation of RNA from DNA**

a)transcriptase b)reverse transcriptase c)both

- **the bacteria having tailed dsDNA bacteriophage.**

a)herpensviraleso b)nidovirale c)caudovirales

- **virus contain strand (++) ssRNA viruses with vertebrate**.

A)caudovirales b)nidovirales c)tymovirales

- **The virus contain small ss RNA viruses that infect plants called**.

a)herpesvirales b)tymovirales c)picornavirales

- **virus of group 3 is**

a)rotavirus b)ebola c)influenza viruses

- **DNA Strand of group 2 viruses is**

a)double b)single c)both

- **ebola virus is belong to group**

a)2 b)3 c)5

- **reverse transcribing viruses belong to group is**

a)4 b)3 c)6

- **hepatitis B virus is belong to group**

a)3 b)4 c)7

- **enzyme that use use to translate their RNA into DNA.**

a)influenza b)ebola c)reverse transcriptase

- **the plant having no distinct root,shoot,and stems. Called**

a)fungus b)thallus c)both

- **sac fungi is also called**

a)zygomycetes b)ascomycetes c)both

- **basidiomycetes is also known as**

a)chytrids b)club fungi c)both

- **about three forth of all vascular plants form association b/w root and fungi**.

a)rhizome b)mycorrhizea c)both

- **the unicellular fungi having single nucleus called**

a)ascomycetes b)besidiomycetes c)yeast

- **diameter of yeast is**

a)3-4um b)4-7um c)7-9um

- **saccharіomyces cerevisia use for**

a)fermentation b)research c)beverages

- **---------- is use to test presence of yeast .**

a)methyl orange b)methylene blue c)both

- **a mold consist of long,branched,threadlike filament of cells called**

a)fungi b)mycorhiza c)hyphae

- **non septate hyphae also called**

a)rhizopus b)puffball c)coenocytic

- **YM shift is observed in hyphae**

a)monomorphic b)dimorphic c)saprotrophs

- **YM shift b/w environment and**

a)plant b)animal c)both

- **cell wall of fungi consist of**

a)cellulose b)chitin c)glycoprotein

- **lichen is association b/w fungus and**

a)plant b)animal c)alga

- **word plasmodial means**

a)cellular slime b)acellular slime c)both

❖ **vegetative stage of cellular slime mold is called**

a)myxomycota b)acrasiomycota c)both

❖ **egg fungi having cellulose in cell wall called**

a) myxomycota b)acrasiomycota c)oomycetes

❖ **---------- cause damage to tobacco crops**.

a)true fungi b)blue mold c)egg fungi

❖ **---------- area near shoreline is well lighted .**

a)limnitic b)littoral c)benthic

❖ **the area of water where oxygen supply is zero called**

a)litoral b)limnitic c)benthic

❖ **rapid growth and multiplication of dianoflagellelated is called.**

a)red algea b)blue algae c)red tide

❖ **---------- is isolated from dust of sanitoria.**

a)tubercle bacilli b)streptomycetes c) both

❖ **histoplasmosis cause by**

a)bacteria b)fungi c)viruses

❖ **size range of minerals is**

a)0.002mm b)0.02mm c)0.002um

❖ **nitrogen concentration in atmosphere is**

a)40% b)30% c)80%

❖ **dry heat sterilization is method**

a)physical b)chemical c)both

❖ **sterilization by filtration is method by**

a)chemical b)physical c)mechanical

❖ **a rapid method of heating temp is**

a)130c b)160c c)190c

❖ **the glassware are sterile by**

a)filtration b)hot air oven c)both

❖ **temperature of autoclave is**

a)115c b)121c c)134c

❖ **heating with bacteriocides heating at 100c for ---------- mints**

a)40 b)30 c)both

❖ **for sterilization of surgical instruments radiation use**

a)alpha b)beta c)gamma

❖ **house hold bleach contain ---------- sodium hypochloride.**

a)4.5% b)5.5% c)5.25%

❖ **example of antiseptics is**

a)alcohol b)iodine solution c)both

❖ **fermentation is type of ---------- respiration**

a)aerobic b)anaerobic c)both

- **sausage taste produce due to bacteria ferment ---------**

a)carbohydrate b)protein c)meat

- **when body defence mechanism work against body own function called**

a)immunity b)autoimmunity c)both

- **no specific immunity is also called**

a)natural b)artificial c)both

- **---------- is chemical use to mobilized immune system**

a)antibody b)epitope c)antigen

- **the unique resistance to foreign particles called**

a)reactivity b)tolerance c)epitope

- **two type of IgA is**

a)serum b)secretory c)both

- **precipitation test of antigen include**

a)ring test b)widal test c)TPA test

- **anaphalctic reaction cause by antigen**

a)IgE B)IgA C)IgG

- **THE preparation use to improve immune system activity.**

a)antibody b)vaccine c)both

❖ **---------- vaccine killed microbes are enter in body** .

a)live b)killed c)heterologous

❖ **the vaccine use in conjunction to diagnostic test called**

a)live b)heterologous c)marker vaccine

1. b	2. c	3. b	4. a	5. a
6. c	7. c	8. a	9. c	10. b
11. b	12. c	13. b	14. b	15. b
16. c	17. c	18. a	19. c	20. b
21. b	22. b	23. c	24. c	25. c
26. a	27. b	28. c	29. c	30. b
31. c	32. b	33. c	34. c	35. a
36. c	37. c	38. a	39. c	40. c
	41. b	42. b	43. c	44. c
45. c	46. b	47. c	48. b	49. c
50. b	51. c	52. b	53. b	54. b
55. a	56. c	57. b	58. c	59. a
60. c	61. b	62. b	63. c	64. b
65. b	66. b	67. c	68. b	69. c
70. b	71. c	72. b	73. c	74. a
75. b	76. c	77. c	78. c	79. c
80. b	81. b	82. b	83. b	84. c
85. a	86. a	87. b	88. c	89. c
90. b	91. c	92. b	93. c	94. b
95. b	96. c	97. b	98. b	99. c

100. c	101. c	102. a	103. b	104. a
105. c	106. a	107. c	108. c	109. b
110. b	111. b	112. c	113. c	114. c
115. b	116. c	117. b	118. a	119. c
120. b	121. c	122. a	123. b	124. b
125. b	126. c	127.	128.	129.

SHORT QUESTION

Q.define microbiology?

the word microbiology derive from two greek words

- Micro means small
- Biologia means studying life.

The branch of biology deals with study of microorganism and their effect on other living organisms.

Q.Define geology ?

Information about microorganism in his search for soil.

Q.Define bacteria?

The microscopic ,unicellular ,prokaryotic organisms characterized by lack of membrane bounded nucleus and membrane bounded organelles.

Q.Define cocci?

A spherically shape bacterium is known as coccus .cocci is small being only 0.5um to 1.0um in diameter.

Q.Explain composition of cell wall?

The bacterium wall is consist of peptidoglycogan which is large molecule and it consist of two amin-carbohydrates

i. N-acetylglucosamine
ii. N-acetylmuramic aid

Q.Explain cell wall of gram positive bacteria?

In gram positive bacteria peptidoglycan is about 25nm wide contains an additional polysaccharide called teichoic acid.

Q.Explain glycocalyx?

The loose layer of capsule is called glycocalyx .it contain a mass of tangled fiber of dextrin ,a polysaccharide. these fibers help bacteria attach to the surface of the host .

Q.What is plasmid?

Extra chromosomal ring of DNA .Although they contain few genes and are not essential for bacterial growth. Plasmid are significant because many carry genes for drug resistance.

Q.What is volutin?

The depots of phosphate .volutin stain deeply with dyes such as methylene blue .their presence in bacteria assist in identification of procedure.

Q.What is normal flora?

The population of microbes that infect body without causing disease.

Commensalism

The symbiosis if only beneficial to microbes called commensalism.

Q.Define pathogenicity ?

The ability of parasite to gain entry to host tissue and bring about physiological change .

Virulency: the degree of pathogenicity

Q.What is AGAR?

THE Polysaccharide derived from marine algae .it had no nutrient to medium but only serve to make it solid so ba cteria cultivate on surface.

Q.Explain AGAR?

CHOCOLATE

To encourage growth of neisseria species ,blood agar is heated before solidification .heating disrupture the red blood cell and release the heamoglobin . the medium is termed chocolate agar because its charred brown appearance.

Q.Explain pour plate technique?

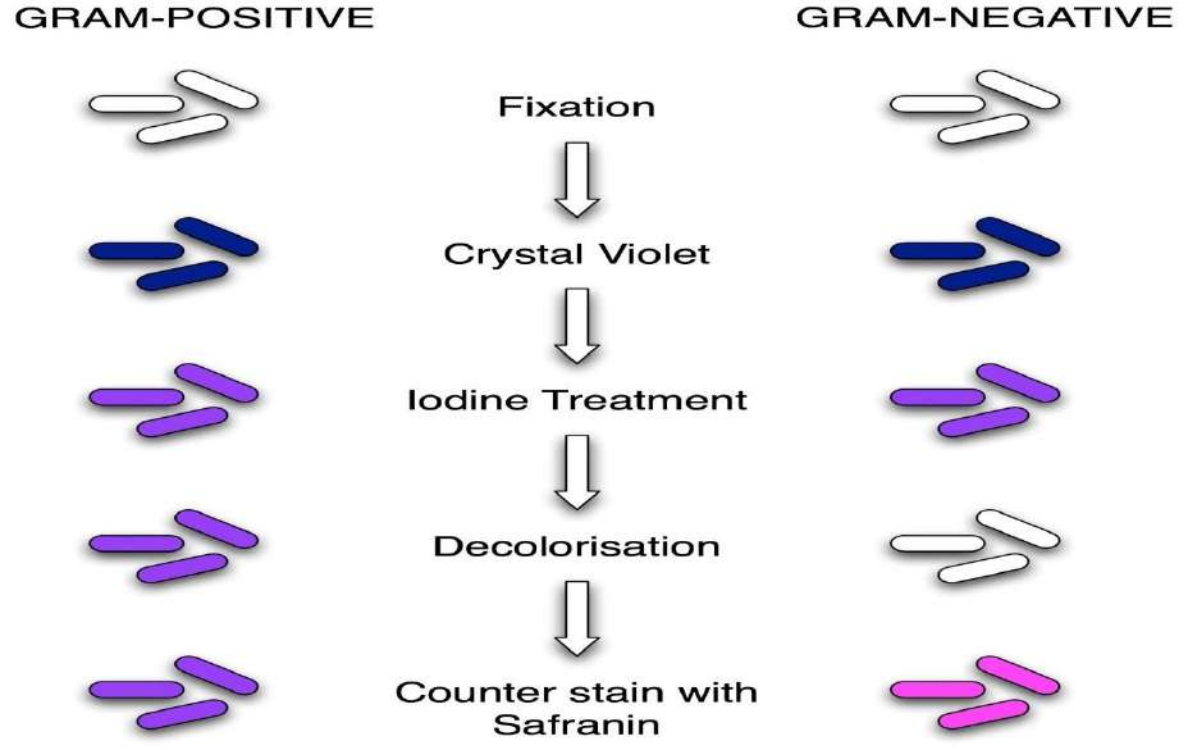
1. Prepare /dilute the sample
2. Pace an aliquot of diluted sample in an empty sterile plate.
3. Pour in 15ml of melted agar which has been cooled to 45c swirl to mix well.
4. Let cool undisturbed to solidified on a flat table top.
5. Invert and incubate to develop colonies.

Q.What is serial dilution?

1. If the organism in a mixed culture in presence in greater number than any other organism it may be possible to obtained it in pure culture by series dilution in tubes of appropriate medium
2. When greatly dilute the specimen contain only the one specie.
3. It is advisable to confirm the purity of a culture isolated in this fashion by a plating procedure

.

Q.What is staining techniques?



Q.What is viruses?

Virus means “poision” .viruses are obligate intracellular parasites which mean that they replicate only inside a living host cell.

Q.What is virion?

A completely assembled virus outside its host cell is known as virion.

Q.What is sence viruses?

Positive –sense: virals RNA is identical to viral mRNA and thus can immediately translated by the host cell.

Negative –sence : viral RNA is complementary to mRNA and thus must be converted to positive –sense RNA by an RNA polymerase before translation.

Q.DNA viruses types?

Group1: viruses possess double –standed DNA.

Group 2: viruses possess single strand DNA

Group 3: viruses possesss double –stranded RNA genome.

Group 4: viruses possess positive –sense single stranded RNA GENOME

Group 5:viruses possess negative sense single stranded RNA genome.

Q.What is chytrids?

The members of chytridiomycetes having similar flagellation chytrids.

Q.Importance of yeast?

1) Help in fermentation and production of wine,beer,breads.
2) It help in research of of eukaryotic microorganisms
3) The yeast is act as biofuel industry
4) The yeast is help in spoilage of wine
5) Yeast is use in spoilage of food

Q.What is dimorphic hyphae in plants?

In plant associate fungi the opposite type of dimorphism exists, the mycelial form occur in the plant and yeast form in the external environment.

Mycelial form ---------- yeast form

Plant environment

Q.Type of paracites?

Obligate parasites: they can grow only on the host cell through special hyphal tips called haustoria.

Facultative : besides living on their hosts they can also survive on the growth media is called symbionts.

Q.Type of water?

Ground water

It originated from deep well and subterranean springs .this is virtually free of bacteria due to filtration action of soil ,deep sand and rock .however, it may become contaminated when it flows along the channels.

Surface water

It is found in steam ,lakes and shallow wells.

Q.What is zones of water?

Littoral zone

A variety of microorganism live in fresh water .the region of a water body near the shoreline.

Limnitic zone

As water deepens temperature become colder and oxygen concentration and light in water decrease.

Benthic zone

The bottom of fresh water few microbes survive,absence of oxygen.

Q.Factor affecting indoor contamination?

1) Ventilation rate
2) Crowding
3) Nature and degree of activity of individual

Q.Enlist air born diseases?

Bacterial

Diphtheria ,tuberculosis,pneumonia,meningitis

Viral

Small pox,measle ,influenza,common cold

Fungal

Systemic mycosis,histoplasmosis,cryptococcosis

Q.Role of soil biota?

- Recycling of energy ,carbon and nutrients in dead plants and animals tissue in form of potentially useful for living plant is key role of soil microbes.
- Human activity polluted the environment with wide variety of synthetic activity
- Soil microbes responsible for trnsformaation of element b/w various forms.

Q.Explain inceniration?

Incineration will also burn any microbe to ash .it also used to sanitize medial and other bio hazardous waste before it is discarded with non-hazadous waste.

Q.Explain working of autoclave?

- Autoclave commonly use steam heated to 121 or 134c
- To achieve sterility a holding time of at least 15-20 mint at 121c or 3 mint at 134c is required.
- Additional sterilizing time is required for liquid and instrument packed in layer of cloth as they may take longer to reach the require temperature.
- Proper autoclave treatment will inactivated fungi,bacteria,viruses and also spores.

Q.Process of tyndallization?

The process involve boiling for period at atmospheric pressure ,cooling ,incubation for a day and finally boiling again.

The three incubation period are to allowed heat resistant spores surviving the previous boiling period period to germinated to form the heat sensitive vegetative stage which can be killed by next boiling step.

Q.What is antiseptic?

Microbial agent harmless enough to be applied to skin and mucous membrane ,should not taken internally .

e.g:including, alcohol,silver nitrate,mercurial nitrate.

Q.What is disinfectant?

Agent that killed microbes but not necessarily their spores but are not safe for application to living tissues ,they used on inanimated objects such as table, floor

e.g:Dettol

Q.define fermentation?

The chemical process an aerobic respiration in which organic molecules ,usually an intermediately of chemical compounds accept electrons.

Q.What is immune system?

The defence system of body that produce resistance against foreign particles or microbes.

Q.What is autoimmunity ?

When our defense system work against body own activity .it produce germs and mistakenly attack the body own tissues or organs.

Q.What is natural immunity ?

The resistance of body against infection by no of mechanical and chemical stimuli. It is non specific because it exist in all humans and present from earlier time.

Q.Acquired immunity?

The formation of antibodies as result of stimulation immune system by foreign particles e.g:antigen.

Define

Reactivity

The ability to react with product of immune system.

Tolerance

The acquired resistance to foreign particles or drugs which develop on its repeated administration over prolong period of time .

Q.What is type of antigen?

Autoantigen

The person own chemical substance produce by stimulation of immune response when self-tolerance breakdown.

Alloantigen

These are antigen existing in certain but not all members of a species the A,B and Rh antigen of human are typical alloantigen.

Heterophiles

These are antigen found in unrelated species .for instance erythrocytes of horses and the viruses that cause mononucleosis have certain identical antigen.

Q.Monoclonal antibodies?

These are antibodies which are produce from hybridoma cells .in these antibodies variation region of each immunoglobulin molecules are same.

Q.Explain antigen-antibody interaction?

1 .Death to microbes that posses the antigen

2.Inactivation of antigen

3.Increase susceptibility of antigen to other body defenses.

Q.What is hypersensitivity?

It is state of increase sensitivity to an antigen arising from the previous exposure to that antigen.

Q.Define vaccine?

It is suspension of living or killed pathogenic microbes modified to make it non pathogenic and administration of which induce immune response in the recipient sufficient to prevent susceptible disease.
marked vaccine

These are vaccine which can be used in conjunction with a diagnosis test to differenciate a vaccinated animal from a carrier animal e.g;used for herpesentivity.

Q.3GENERATION VACCINE?

These are vaccine that contain microbial fraction produced by genetic engineering .these are also called polynucleotides or genetic vaccines.

Q.Gene deleted vaccine?

THESE ARE genetically engineered vaccine which involve the removal or mutation of virulence gene of pathogen.

Q.Anti viral serra?

Antiviral antibodies are believed to act differently because viruses are intracellular parasites and antibodies cannot penetrate cells therefore inactivation