

KASHMIR INSTITUTE OF EXCELLENCE

ONE SHOT REVISION

(ZOOLOGY)

**TOPIC: ANIMAL HUSBANDRY, ANIMAL KINGDOM,
TISSUES, BIOMOLECULES**

ANIMAL HUSBANDARY

Q1: Which of the following statements about breeding is incorrect?

- (1) By inbreeding, pure lines cannot be evolved**
- (2) Continued inbreeding, especially close inbreeding reduces fertility and productivity**
- (3) Cross-breeding allows desirable qualities of two different breeds to be combined**
- (4) Inbreeding exposes harmful recessive genes that are eliminated by selection.**

Q2: In out-crossing the mating animals should not have a common ancestor up to:

- (1) 2 -4 generations
- (2) 4-8 generations
- (3) 6-8 generations
- (4) 4-6 generations**

Q3: The aquaculture involves the production of useful

- (1) Aquatic Plants
- (2) Shrimps and prawns
- (3) Fishes and oysters
- (4) All of these

Q4: Read the following four statements (A-D)

- (A) Inbreeding exposes harmful recessive genes that are eliminated by selection**
- (B) Artificial insemination helps us overcome several problems of normal matings.**
- (C) In MOET, the embryo eggs at 8 -32 cells stages are recovered non-surgically and transferred to surrogate mothers.**
- (D) A single outcross often helps to overcome inbreeding depression.**

How many of the above statement are correct?

- (1) Four** (2) Three (3) Two (4) One

Q5: Read four statements (a-d) carefully:

- (a) Honey is a food of high nutritive value and also finds use in the indigenous system of medicine**
 - (b) Beewax finds many uses in industry such as in the preparation of cosmetics and polishes of various kinds.**
 - (c) Most common species of honey bees reared is *Apis indica***
 - (d) Male individuals of honeybees are developed parthenogenetically.**
- How many statements among these are correct?**

(1) One

(2) Two

(3) Three

(4) Four

Q6: The term “inbreeding depression” is related to:

- (1) Increased fertility and productivity
- (2) Increased milk production
- (3) Reduced fertility and productivity
- (4) Reduced milk production

Q7: Fill up the blanks by selecting the correct option.

In cross-breeding, of one breed are mated with of another breed.

- (1) Superior males, normal females**
- (2) Normal males, superior females**
- (3) Normal males, normal females**
- (4) superior males, superior females**

Q8: Which of the following are common marine fishes?

(1) Sardine, mackerel and pomfret

(2) Catla and common carp

(3) Rohu

(4) All of these

Q9: Bee keeping is called as:

(1) Apiculture

(2) Sericulture

(3) Fishing

(4) Pisciculture

Q10: Animal husbandry includes:

(1) Poultry farming

(2) Fisheries

(3) Dairying

(4) All of these

Q11: The practices concerned with the improvement in animals husbandry include:

- (1) Management of farm and farm animals.**
- (2) Management of animals and plants at a same place.**
- (3) Genetic engineering.**
- (4) None of the above.**

Q12: Milk yield is primarily dependent on the:

- (1) Quality of breeds.
- (2) Quality of milk.
- (3) Both (1) and (2).**
- (4) None of the above.

Q13: Which of the following is an aim of animal breeding?

- (1) Increasing the yield of animals.
- (2) Improving the desirable qualities of the produce.
- (3) Producing better looking animals.
- (4) Both (1) and (2).

Q14: Outbreeding is an important strategy of animal husbandry because it:

(1) Help in accumulation of superior genes.

(2) Is useful in producing pureline of animals.

(3) Is useful in overcoming inbreeding depression.

(4) Exposes harmful recessive genes that are eliminated by selection.

Q15: Interspecific hybridisation in the mating of:

- (1) Animals within same breed without having common ancestors.
- (2) Two different related species.
- (3) Superior males and females of different breeds.
- (4) More closely related individuals within same breed for 4-6 generations.

Q16: Hissardale is a new breed of developed in Punjab by crossing and

Here to refers to:

(1) A → sheep, B → Bikaneri ewes, C → Marino rams.

(2) A → chicken, B → Dorking, C → Sussex

(3) A → chicken, B → leghorn, C → Plymouth rock

(4) A → cow, B → Jersey, C → Brown Swiss

Q17: A mule is produced by:

- (1) Cross-breeding.
- (2) Out-breeding.
- (3) Inbreeding.
- (4) Interspecific hybridisation.

Q18: Controlled breeding experiments are carried out using:

(1) Interspecific hybridisation.

(2) Artificial insemination.

(3) MOET

(4) Intraspecific hybridisation.

Q19: MOET stands for:

- (1) Multiple Ovulation Embryo Transfer technology.**
- (2) Multiple Ovary and Embryo Transfer technology.**
- (3) Multiple Ovulation Embryo Test Technology.**
- (4) Method of Egg Transfer.**

Q20: In MOET procedure to induce follicular maturation and superovulation which of the following hormones are administered to the cow?

- (1) Follicle stimulating hormone**
- (2) Progesterone
- (3) Androgen
- (4) Oxytocin

Q21: During MOT at which at the following stage embryo is transferred to surrogate mothers:

- (1) Unfertilised ovules.
- (2) 2-celled stage.
- (3) Fertilised egg.
- (4) 8-32 celled staged.**

Q22: Rearing of honey bees for obtaining honey and bee wax is called?

(1) Pisciculture

(2) Sericulture

(3) Apiculture

(4) Aquaculture

Q23: Some common freshwater fishes are:

(1) Catla

(2) Rohu

(3) Common carp

(4) All of these

Q24: There are several species of honeybees which can be reared. Of these the species reared in India is:

(1) Apis indica

(2) Apis dorsata

(3) Trigona iridipennis

(4) Apis mellifera

Q25: Consider the following two statements:

(I) In spite of having more than 70 per cent of the world livestock population, the contribution of India and China to the world farm produce is only 25 per cent.

(II) The productivity per unit of cattle in these countries is very low.

(1) Both (I) and (II) are true and (II) explains (I)

(2) Both (I) and (II) are true but (II) does not explain (I).

(3) (I) is true but (II) is false.

(4) Both the statement are not true.

ANIMAL KINGDOM

Q1: Read the following statements and choose the correct option:

- (i) Aves are homothermous.**
- (ii) Pinnae are present in mammals.**
- (iii) Operculum is present in Chondrichthyes.**
- (iv) Skin of amphibians is dry and horny.**
- (v) Open type of circulation is found in cyclostomes.**

- (1) I and II only are wrong.**
- (2) II, III, and IV only are wrong.**
- (3) I, II and IV only are wrong.**
- (4) III, IV and V only are wrong.**

Q2: Select the group of organisms given below which have diploblastic members only with same level of organisation.

(1) *Ctenoplane*, *Taenia*, *Meandrina*

(2) *Gorgonia*, *Physalia*, *Meandrina*

(3) *Spongilla*, *Taenia*, *Physalia*

(4) *Gorgonia*, *Physalia*, *Fasciola*

Q3: Select the pseudocoelomates from the list of organism given below.

(1) *Ascaris*, *Fasciola*, *Taenia*

(2) *Culex*, *Locusta*, *Limulus*

(3) *Wuchereria*, *Ascaris*, *Ancylostoma*

(4) *Nereis*, *Hirudinaria*, *Wuchereria*

Q4: Identify the correct statement (s)

Statement I:-*Obelia* exhibits both polyp & medusa stage

Statement II:- *Hydra* exhibits medusa & *Adamsia* exhibits polyp stage.

- (1) Both statements are correct.
- (2) Both statements are incorrect.
- (3) I is correct & II is incorrect.
- (4) I is incorrect & II is correct.

Q5: Which of the following animal possess file-like rasping organ in its mouth?

(1) Pleurobranchia

(2) Alplysia

(3) Pinctada

(4) both 2 and 3

Q6: Identify the correct statement/s.

(I) *Chelone* is an amphibian

(II) *Pteropus* is a mammal

(III) Penguin belongs to aves

(IV) Dogfish belongs to class Osteichthyes

(1) I, II, III are correct

(2) II, III, IV

(3) I & IV

(4) II and III

Q7: Which of the following is correct w.r.t classification of Myxine?

(1) Chordata, Agnatha, Pisces, Cyclostomata

(2) Chordata, Vertebrata, Agnatha, Cyclostomata

(3) Chordata, Vertebrata, Gnathostomata, Chondrichthyes

(4) Chordata, Vertebrata, Gnathostomata, tetrapoda

Q8: Sapla & Doliolum belong to :

- (1) Hemichordata
- (2) Cephalochordata
- (3) Urochordata
- (4) Protochordata

Q9: Identify the organism on the basis of following features:

(A) Absence of scales

(B) Presence of Cloaca

(C) Oviparous

(1) Clarius

(2) Labeo

(3) Hyla

(4) Pristis

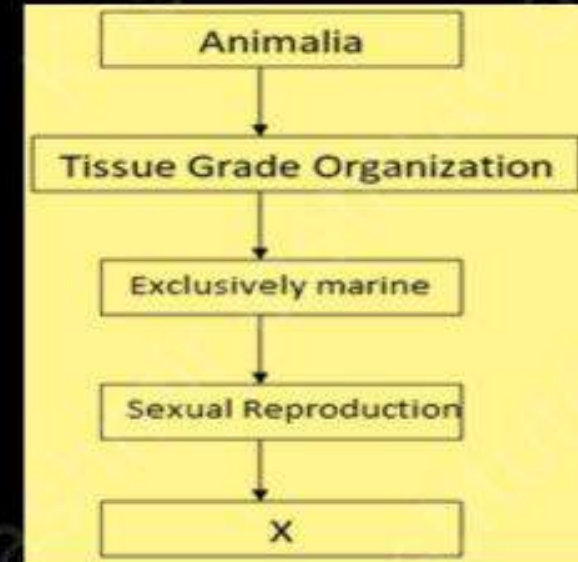
Q10: Identify phylum X:

(1) Physalia

(2) Adamsia

(3) Taenia

(4) Pleurabanchia



Q11: How many statements are correct regarding Aves:

(I) They have pneumatic bones

(II) Hind limbs are used for walking and swimming only

(III) Skin is completely without glands

(IV) They are warm blooded

(1) One

(2) Two

(3) Three

(4) Four

Q12: Read the option carefully and choose the correct option for Scoliodon, Pristis and Trygon:

- (1) They have terminal mouth & placed dorsally
- (2) Notochord is persistent throughout life
- (3) Skin is tough, without scales
- (4) Air bladder is present

Q13: How many of the above statements are not incorrect for osteichthyes?

- (A) Four pairs of gills**
- (B) Air bladder is present**
- (C) Mostly Oviparous**
- (D) Fertilization is usually external**
- (E) Mouth is mostly terminal**

(1) 5

(2) 4

(3) 3

(4) 2

Q14: Two examples which exhibit the property of bioluminescence

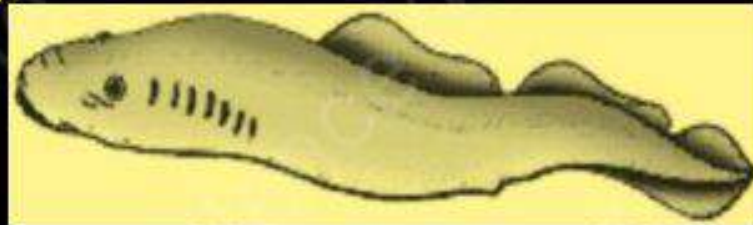
(1) *Obelia* & *Physalia*

(2) *Pleurobrachia* & *Meandrina*

(3) *Ctenoplana* & *Physalia*

(4) *Ctenoplana* & *Pleurobrachia*

Q15: Identify the given diagram and choose the incorrect option about it?



- (1) All members of the class are endoparasites.
- (2) Their body bears 6-15 pair of gills
- (3) They are having sucking and circular mouth but without jaws
- (4) Body is devoid of scales but paired fins are present

Q16: Poikilothermic animal with 4 chambered heart is:

(1) *Psittacula*

(2) *Crocodylus*

(3) *Hemidactylus*

(4) *Balaenoptera*

Q17: Which of the following is a flightless bird?

(1) Neophron

(2) Struthio

(3) Psittacula

(4) Pavo

Q18: Which of the following is a egg lay mammal?

(1) Ornithorhynchus

(2) Macropus

(3) Pteropus

(4) Balaenoptera

Q19: Which of the following migrate for spawning from marine to fresh water

(1) Saw fish

(2) lampreys

(3) Fighting fish

(4) Angel fish

Q20: Animals A and B give similar appearance. How many of the given features belong to both A and B?

(i) Presence of tympanum

(ii) presence of scales

(iii) moist skin

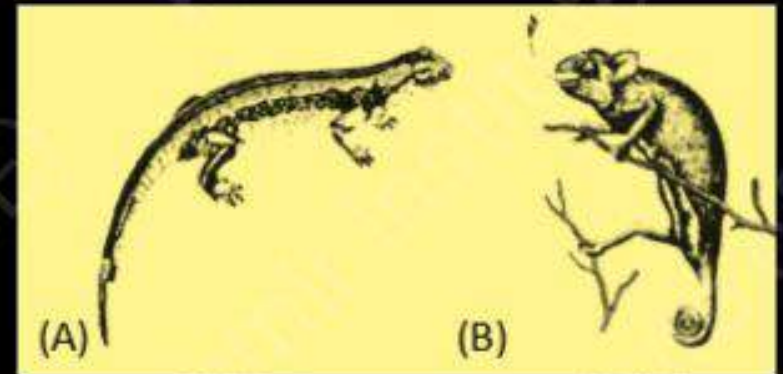
(iv) Presence of cloaca

(1) (i) and (iv)

(2) (ii) and (iii)

(3) (ii) and (iv)

(4) (i) and (iii)



Q21: Which is not a function of cnidoblast in coelenterates

- (1) Anchorage
- (2) Locomotion and defense
- (3) Capturing of prey
- (4) Storage of food

Q22: Fill in the blanks and choose the correct option?

“In sponges, fertilization is A and development is B having a larval stage which is morphologically C from the adult

(1) A-Internal, B-Indirect, C-Distinct

(2) A-Internal, B-Indirect, C-Similar

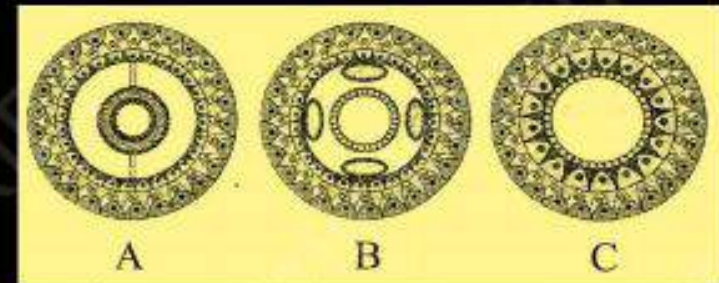
(3) A-External, B-Direct, C-Distinct

(4) A-External, B-Indirect, C-Similar

Q23: The figures given show the types of coelom. Identify them and select the correct group of organisms which possess them.

ANSWER (1)

A	B	C
(1) Annelids	Aschelminthes	Platyhelminthes
(2) <u>Molluscs</u>	Arthropods	Platyhelminthes
(3) Echinoderms	Aschelminthes	Annelids
(A) erms	Arthropo	Plavhelmin



Q24: Which one of the following statements is incorrect.

- (1) In cockroaches and prawns, excretion of waste material occurs through Malphigian tubules.
- (2) In ctenophores, locomotion is mediated by comb plates.
- (3) In Fasciola, flame cells take part in excretion
- (4) Earthworms are hermaphrodites while Neries are unisexual

Q25: Examples of gregarious pest and living fossil are respectively :

- (1) *Locusta* and *Apis*
- (2) *Apis* and *Limulus*
- (3) *Limulus* and *Locusta*
- (4) *Locusta* and *Limulus*

Q26: The elephant tusk shell is

(1) Cypraea

(2) Dentalium

(3) Limax

(4) Nautilus

Q27: An animal that transforms from bilateral to radial symmetry in its life history is

(1) Hydra

(2) Obelia

(3) Starfish

(4) Sponge

Q28: Which one these animals is not a homeotherm.

(1) *Macropus*

(2) *Chelone*

(3) *Psittacula*

(4) *Camelus*

Q29: A marine cartilaginous fish that can produce electric current is

(1) *Pristis*

(2) *Torpedo*

(3) *Trygon*

(4) *Scoliodon*

Q30: Match the columns:

Column-I	Column-II
A. <u>Scoliodon</u>	(i) Dog-fish
B. <u>Trygon</u>	(ii) Great white shark
C. <u>Carcharodon</u>	(iii) Sting-ray
D. <u>Pristis</u>	(iv) Saw-fish

(1) A = (i), B = (iii), C = (ii), D = (iv)

(2) A = (i), B = (iv), C = (ii), D = (iii)

(3) A = (i), B = (ii), C = (iii), D = (iv)

(4) A = (iv), B = (i), C = (iii), D = (ii)

TISSUES

Q1: Nephridia function as excretory organs in

(1) Humans

(2) Cockroach

(3) Earthworm

(4) Planaria

Q2: Correct statement about wings in cockroach is:

- (1) Forewings are transparent, dark and leathery.
- (2) Hind wings are opaque and membranous
- (3) Forewings used in flight and hind wings cover them.
- (4) Forewings are opaque, dark and leathery.**

Q3: The boat shaped sternum present in female cockroach is:

(1) 9th & 10th sternum

(2) 17th sternum

(3) 9th & 13th sternum

(4) 7th sternum

Q4: The junctions that communicate with each other by connecting cytoplasm of adjoining cells are:

- (1) tight junctions
- (2) adhering junctions.
- (3) slight junctions .
- (4) gap junctions.

Q5: Which of the following are the examples of dense connective tissue?

- (1) tendons, ligaments, bones and cartilages.
- (2) tendons, ligaments and cartilages.
- (3) tendons and ligaments.**
- (4) none

Q6: Smooth muscle fibres are:

- (1) Cylindrical, unbranched, striated, multinucleate and voluntary
- (2) Spindle-shaped, unbranched, non-striated, uninucleate and involuntary
- (3) Cylindrical, unbranched, non-striated, multinucleate and involuntary
- (4) Spindle-shaped, unbranched, striated, uninucleate and voluntary

Q7: The compound eyes of cockroaches consist of about:

- (1) 200 hexagonal ommatidia
- (2) 2000 hexagonal ommatidia**
- (3) 20 hexagonal ommatidia
- (4) 20000 hexagonal ommatidia

Q8: Read the following four statements

(A) In cockroach crop is used for the storage of food

(B) Gizzard helps in grinding the food particles.

(C) The entire gut is lined by cuticle

(D) A ring of 6-8 blind tubules called hepatic caecae or gastric caecae is present at the junction of mid gut and hind gut.

How many of the above statements are not correct?

(1) Two

(2) Three

(3) Four

(4) One

Q9: Column-I with column-II and select the correct answer using the codes given below.

Column-I	Column-II
(A) Squamous	(I) Intestine
(B) Cuboidal	(II) Trachea
(C) Columnar	(III) Ovary
(D) Ciliated	(IV) Blood vessels
(E) <u>Pseudostratified</u>	(V) Bronchioles

- (1) A – I, B – II, C – IV, D – III, E – V
(2) A – V, B – IV, C – II, D – I, E – III
(3) A – IV, B – V, C – I, D – II, E – III
(4) A – IV, B – III, C – I, D – V, E – II

Q10: Which of the following is an incorrect match with respect to structure and its location in male and female cockroach?

- (1) Spermathecae – 8th abdominal segments**
- (2) Mushroom gland – 6th- 7th abdominal segments
- (3) Testes – 4th – 6th abdominal segments
- (4) Ovaries – 2nd -6th abdominal segments

Q11: Which one of the following stops leakage in tissue?

(1) Tight junction

(2) Adhering junction

(3) Gap junction

(4) All of the above

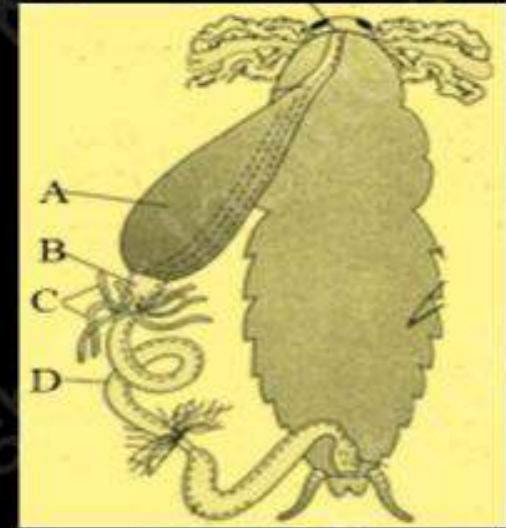
Q12: How many statements are correct for epithelium?

- (i) It provides a covering for some body parts.**
- (ii) Cells are compactly packed.**
- (iii) Less intercellular material.**
- (iv) Compound epithelium has protective function.**

- (1) One**
- (2) Three**
- (3) Two**
- (4) Four**

Q13: Given below is alimentary canal of cockroach. Read the given statements and find out the correct answer:

- (i) Helps in grinding the food particles.**
- (ii) Secrete digestive juice.**
- (iii) Used for storing of food.**
- (iv) Digestion and absorption of food.**



ANSWER: 3

- (1) i – C, ii – B, iii – D, iv – A
- (2) i – B, ii – A, iii – C, iv – D
- (3) i – B, ii – C, iii – A, iv – D
- (4) i – D, ii – C, iii – A, iv – B

Q14: Metamorphosis found in cockroach is of type:

- (1) Metabolous
- (2) Paurometabolous
- (3) Holometabolous
- (4) Hemimetabolous

Q15: In cockroach the nymph moults about _____ times to reach adult.

(1) 30

(2) 15

(3) 19

(4) 13

Q16: The head, thorax and abdomen in P.americana are formed by fusion of following segments respectively.

(1) 6, 3, 9

(2) 3, 6, 10

(3) 6, 3, 10

(4) 3, 6, 9

Q17: Mouth parts of cockroach are of:

- (1) Chewing and biting type.**
- (2) Piercing and sucking type.**
- (3) Sucking and siphoning type.**
- (4) Sucking and rasping type.**
- (4) Dense irregular connective tissue**

Q18: Excretory material in cockroach is 'A' and it is excreted by 'B'. A & B are respectively.

- (1) Uric acid and green glands.
- (2) Malpighian tubules and uric acid.
- (3) Urea and malpighian tubules.
- (4) Uric acid and malpighian tubules**

Q19: Correct location about stomach and esophagus in earthworm regarding segmentation is:

- (1) stomach 5th–7th segment, esophagus 3rd–5th segment
- (2) esophagus 9th–14th segment, stomach 14th–18th segment
- (3) stomach 13th–18th segment, esophagus 9th–13th segment
- (4) stomach 9th–14th segment, esophagus 5th–7th segment**

Q20: How many statements are correct

(I) Areolar tissue is loose connective tissue

(II) Fibres & fibroblasts are loosely arranged in dense connective tissue

(III) Neuroglia make up more than the volume of neural tissue in our body

(IV) Nerve impulse swiftly travels along its myelin sheath

(1) 1

(2) 3

(3) 4

(4) 2

Q21: Find the incorrect statement about the digestive system of frog-

**(1) The alimentary canal is long because frogs are
carnivorous**

(2) Food is captured by the protusible tongue

(3) Final digestion takes place in intestine

(4) Digested food is absorbed by the numerous finger like folds in the inner wall of intestine called villi and microvilli.

Q22: How many of the following statements are correct with respect to *Pheretima*.

- (A) The ventral surface is distinguished by the absence of genital openings (Pores).**
- (B) A single female genital pore is present in the mid-ventral line of 18th segment.**
- (C) Integumentary nephridia, attached to lining of the body wall of segment 3 to the last that open on the body surface.**

(1) Three

(2) Two

(3) One

(4) Zero

Q23: An epithelial tissue which has thin flat cells arranged edge to edge so as to appear like closely packed tiles, found to be present at:

- (1) Inner lining of capillaries**
- (2) outer surface of ovary**
- (3) inner lining of stomach**
- (4) inner lining of fallopian tube.**

Q24: Tendon connects a:

(1) bone with bone

(2) bone with muscle

(3) cartilage with muscle

(4) ligament with muscle

Q25: The terga and sterna of cockroach are joined by:

- (1) connective tissue
- (2) cartilage
- (3) cementing glue
- (4) arthrodial membrane.

Q26: In cockroach, oothecae are formed by the secretion of :

- (1) phallic gland
- (2) conglobate gland
- (3) collateral gland
- (4) mushroom gland

Q27: A student was given a sample of tissue. He observes and concludes the following characters.

- (A) The cells are composed of a single layer of tall and slender cells.**
- (B) Their nuclei are located at the base**
- (C) Free surface may have microvilli**
- (D) It is found in the lining of stomach and intestine.**
- (E) They help in secretion and absorption.**

Based on the above features identify the epithelium

- (1) Cuboidal epithelium**
- (2) Columnar epithelium**
- (3) Squamous epithelium**
- (4) Glandular epithelium**

Q38: In male cockroaches, sperms are stored in which part of the reproductive system?

- (1) Seminal vesicles** (2) Mushroom glands
(3) Testes (4) Vas deferens

BIOMOLECULES

Q1: Read the following statements (A – F)

(A) Lecithin is found in cell wall

(B) Collagen is most abundant protein on earth

(C) Chitin is found in cell wall of fungi

(D) Fats have higher melting point than oils

(E) Zwitter ionic form can be observed in amino acids

(F) Protein is a homopolymer

How many of the above statements are true?

(1) 0

(2) 1

(3) 3

(4) 2

Q2: Refers to the given reactions

(I) Adenine + χ \rightarrow Adenosine

(II) Adenosine + Υ \rightarrow Adenylic acid

What does χ and Υ represent

ANSWER: 2

	χ	Υ
(1)	Phosphate group	Sugar molecule
(2)	Sugar molecule	Phosphate group
(3)	Sugar molecule	Nitrogen base
(4)	Nitrogen base	Sugar molecule

Q3: Which of the following polymers is a heteropolymer?

(1) Starch

(2) Chitin

(3) Inulin

(4) Insulin

Q4: DNA & RNA differ in

- (1) Nitrogenous Bases & phosphate groups
- (2) Sugar & Phosphate groups
- (3) Nitrogenous bases & sugars
- (4) Only in pentose sugars

Q5: Which among the following nucleotide is present only in DNA?

(1) Uridine

(2) Uridylic acid

(3) Cytidine

(4) Thymidylic acid

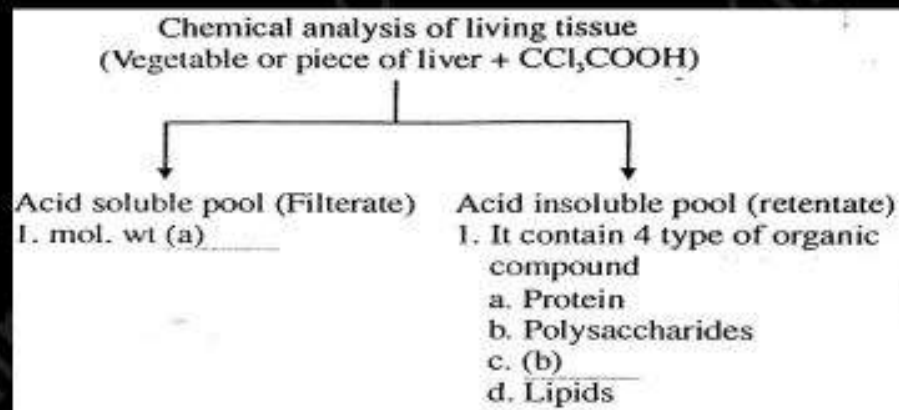
Q6: The bonds which are present in nucleic acids is/are

- (1) Hydrogen bond (2) Phosphodiester bond
(3) Glycosidic bond (4) All are present

Q7: Which of the following statements about amino acids is incorrect?

- (1) Essential amino acids are not synthesized in the body, therefore have to be provided in the diet.
- (2) Tyrosine, phenylalanine, tryptophan are aromatic amino acids
- (3) Cystein and methionine are sulphur containing amino acids
- (4) Lysine and arginine are acidic amino acid

Q8: Fill in the blanks in 1 and 2 in the below flowchart.



(1) a → greater than 1000 Dalton b → Nucleotide

(2) a → 8-800 Da b → Nucleic acid

(3) a → greater than 10,000 Da b → greater than 1000
Dalton

(4) a → greater than 1000 Dalton b → Nucleoside

Q9: Triglycerides are fatty acid esters of glycerol, which are formed by the esterification of ___ molecules (s) of fatty acids with ___ molecule (s) of glycerol.

(1) One, two

(2) One, three

(3) Three, one

(4) Two, one

Q10: Match the following: -

	Column I		Column II
a	Alkaloid	I	<u>Vinblastin,</u> <u>curcumin</u>
B	Essential oils	II	Morphine, Codeine
C	Toxins	III	Lemon grass oil
D	Drugs	IV	<u>Abrin, Ricin</u>

(1) a-II, b-III, c-IV, d-I

(2) a-III, b-II, c-IV, d-I

(3) a-II, b-III, c-I, d-IV

(4) a-III, b-II, c-I, d-IV

Q11: The acid insoluble fraction has only four type of organic compounds i.e:

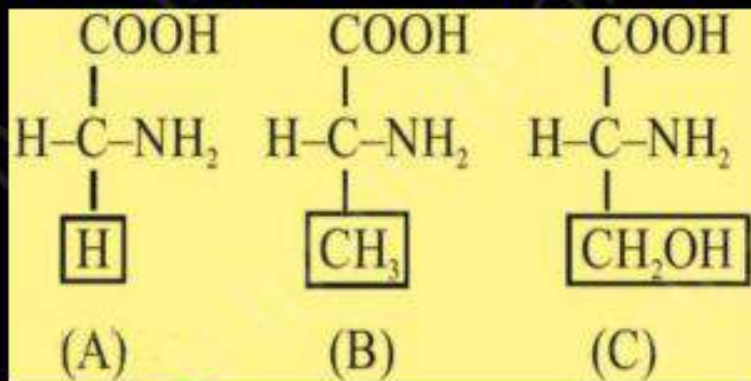
(1) Protein, lipid, Amino acid, N₂ base

(2) Protein, Nucleic acids, Polysaccharides, Lipid

(3) Amino acid, N₂ base, Monosaccharide, Lipid

(4) Amino acid, N₂-base, Polysaccharides, Protein

Q12: Identify structure A, B and C:



ANSWER: 2

	A	B	C
1	Alanine	Serine	Valine
2	Glycine	Serine	Alanine
3	Glycine	Alanine	Serine
4	Glycine	Ananine	Valine

Q13: Which one of the following is a non reducing carbohydrate?

(1) Maltose

(2) Sucrose

(3) Lactose

(4) Ribose

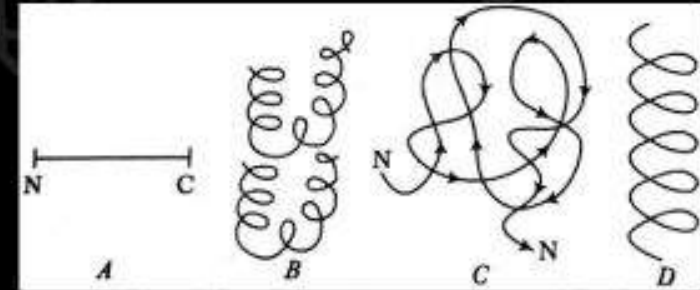
Q14: What kind of structures of protein are shown in the figures given below?

(1) A = 1° structure, B = 2° structure,
C = 3° structure, D = 4° structure

(2) A = 4° structure, B = 2° structure,
C = 3° structure, D = 1° structure

(3) A = 1° structure, B = 4° structure,
C = 3° structure, D = 2° structure

(4) A = 4° structure, B = 3° structure,
C = 2° structure, D = 1° structure



Q15: Which one of the following statements is correct with reference to enzymes?

(1) Holoenzyme = Apoenzyme + Coenzyme

(2) Coenzyme = Apoenzyme + Holoenzyme

(3) Holoenzyme = Coenzyme + Cofactor

(4) Apoenzyme = Holoenzyme + Coenzyme

Q16: Which of the following is not incorrect?

- (1) Blood glucose concentration in a normal healthy individual is 0.045 – 0.050 mM
- (2) Living state (of all organisms) is a non-equilibrium steady-state to be able to perform work
- (3) As living organisms work continuously, they always reach equilibrium
- (4) Living state is possible in few cases without metabolism

Q17: The correct order of chemical composition of living tissues/cells in term of % of the total cellular mass is –

(1) Nucleic acid > Proteins > H₂O > Carbohydrate > Ions > Lipid

(2) H₂O > Proteins > Nucleic acid > Carbohydrate > Lipid > Ions

(3) H₂O > Proteins > Carbohydrate > Nucleic acid > Lipid > Ions

(4) Lipid > Ions > Carbohydrate > H₂O Proteins > Nucleic acid

Q18: Match correctly between Column I and Column II –

Column I	Column II
A. Collagen	I. Glucose transport
B. Trypsin	II. Binding with some chemical like for small taste and hormones
C. Insulin	III. Hormones
D. Antibody	IV. Enzyme
E. Receptor	V. Intercellular ground substance
F. GLUT – 4	VI. Fight infectious agents

(1) A – V, B – IV, C – III, D – VI, E – II, F – I

(2) A – II, B – III, C – IV, D – V, E – VI, F – I

(3) A – VI, B – II, C – I, D – V, E – IV, F – III

(4) A – I, B – IV, C – III, D – VI, E – II, F – V

Q19: Which of the following is incorrect?

- (1) Quaternary structure refers to the spatial relations between individual polypeptide chains in a multichained protein
- (2) The tertiary structure is absolutely necessary for many biological activities of protein
- (3) All the enzymes are proteins in nature
- (4) Protein structure is correlated with protein function

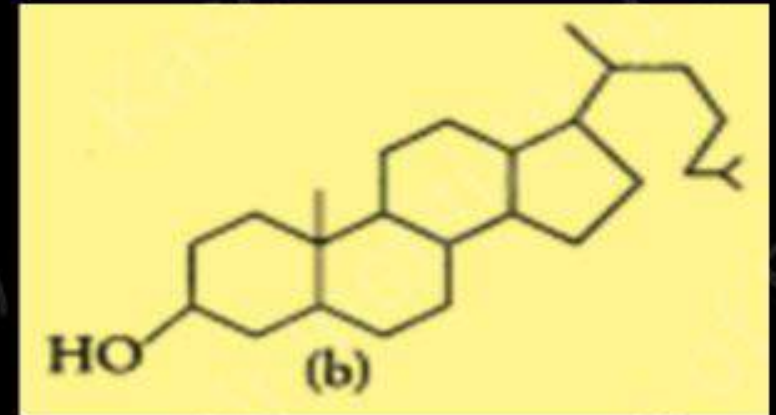
Q20: This molecule is related to –

(1) Phospholipid

(2) Lecithin

(3) Cholesterol

(4) Oleic acid



- Q21: I. Right end of polysaccharide is called reducing end while left end is called nonreducing end.**
- II. Starch can hold 12 molecules in its helical secondary structure but cellulose being nonhelical, cannot hold 12**
- III. Starch and glycogen are branched molecules**
- IV. Starch in plant and glycogen in animal are store houses of energy**

- (1) I and IV are correct only**
- (2) II and III are correct only**
- (3) Only IV is correct only**
- (4) All are correct**

Q22: Which of the following are not polymeric?

- (1) proteins
- (2) Polysaccharides
- (3) Lipids
- (4) Nucleic acids

Q23: Prosthetic groups differ from co-enzymes in that

- (1) They can serve as co-factors in a number of enzyme – catalyzed reactions**
- (2) They require metal ions for their activity**
- (3) They (prosthetic groups) are tightly bound to apoenzymes**
- (4) Their association with apoenzymes is transient**

Q24: Which acid is used for chemical analysis of biomolecules?

(1) Trichlorobromic acid

(2) Trichloroacetic acid

(3) Dichloroacetic acid

(4) Trichloroformic acid

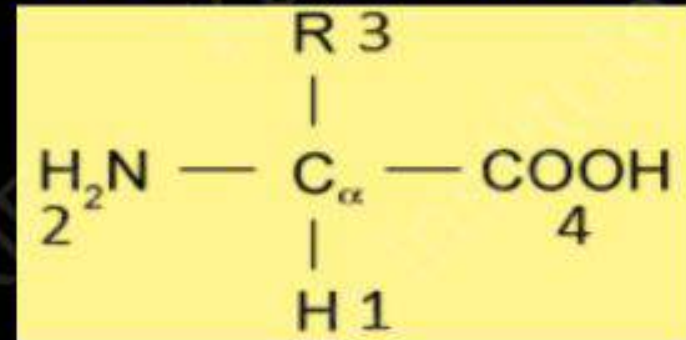
Q25: Which two groups of the following formula are involved in the formation of peptide linkage between different amino acid residues

(1) 2 and 3

(2) 1 and 4

(2) 1 and 3

(4) 2 and 4



Q26: The essential components of many coenzyme are:

(1) carbohydrate

(2) Vitamins

(3) proteins

(4) Nucleic acid

Q27: Transaction safe structure (ES) complex is:

- (1) Transient & stable
- (2) Transient & unstable**
- (3) Permanent & unstable
- (4) Permanent & stable

Q28: Which is cofactor of carbonic anhydrase and carboxy peptide respectively

(1) Mg, Zn

(2) Zn, cu

(3) Fe, Mg

(4) Zn, Zn

Q29: Which of the following is a most abundant protein in the plant world?

(1) Collagen

(2) trypsin

(3) RuBisCO

(4) chitin.