

**General Instructions:**

1. The Question Paper contains three sections.
2. Section A has 24 questions. Attempt any 20 questions.
3. Section B has 24 questions. Attempt any 20 questions.
4. Section C has 12 questions. Attempt any 10 questions.
5. All questions carry equal marks.
6. There is no negative marking.

**SECTION - A**

Section – A consists of 24 questions. Attempt any 20 questions from this section. The first attempted 20 questions would be evaluated.

- 1 Which sentence is true for Bryophytes ? 1
  - (A) They are autotrophic
  - (B) Vascular tissues are absent
  - (C) Fertilization takes place in the presence of water
  - (D) All of the three
  
- 2 Match the following : 1

A	B
(p) Microsporophyll	(i) Pollen grain
(q) Microsporangium	(ii) Stamen
(r) microspores	(iii) anther
(s) megasporophyll	(iv) gynoecium

  - (A) p - (iv), q - (iii), r - (i), s - (ii)
  - (B) p - (ii), q - (i), r - (iii), s - (iv)
  - (C) p - (iii), q - (ii), r - (i), s - (iv)
  - (D) p - (ii), q - (iii), r - (i), s - (iv)
  
- 3 If the seeds are formed from the megasporophylls and not enclosed in a fruit the plant belongs to \_\_\_\_ . 1
  - (A) Pteridophytes
  - (B) Bryophytes
  - (C) Angiosperms
  - (D) Gymnosperms
  
- 4 Which classification system had been given by Whittaker ? 1
  - (A) Three domain classification
  - (B) Binomial classification
  - (C) Five kingdom classification
  - (D) Artificial classification
  
- 5 Presence of rigid cell wall is characterized by kingdom \_\_\_\_\_. 1
  - (A) Protista
  - (B) Plantae
  - (C) Monera
  - (D) Animalia
  
- 6 In which plant, gametophytic phase is main and sporophytic phase is subsidiary. 1
  - (A) Bryophytes
  - (B) Pteridophytes
  - (C) Gymnosperms
  - (D) Angiosperms
  
- 7 Fungus cell wall is made up of \_\_\_\_\_. 1
  - (A) Cellulose
  - (B) Protein
  - (C) Chitin
  - (D) Carbohydrates
  
- 8 Unicellular eukaryotic microorganisms comprise \_\_\_\_\_. 1
  - (A) Fungi
  - (B) Monera
  - (C) Plants
  - (D) Protista

- 9 Kingdom Protista include : 1
- (A) Paramecium, Euglena, Dinoflagellates  
 (B) Hydra, Amoeba, Paramoecium  
 (C) Yeast, Euglena, Dinoflagellates  
 (D) Mushroom, Paramoecium, Euglena.
- 10 Match the following : 1
- | A            | B                 |
|--------------|-------------------|
| (p) Yeast    | (i) Bread mould   |
| (q) Rhizopus | (ii) Mushroom     |
| (r) Agaricus | (iii) Unicellular |
- (A) p - (ii), q - (i), r - (iii)  
 (B) p - (i), q - (ii), r - (iii)  
 (C) p - (iii), q - (i), r - (ii)  
 (D) p - (iii), q - (ii), r - (i)
- 11 Which of the following is included in five kingdom classification. 1
- (A) Monera, Protista, Animalia, Plantae, Algae  
 (B) Monera, Protista, Fungi, Plantae, Animalia  
 (C) Virus, Prokaryota, Fungi, Plantae, Animalia  
 (D) Algae, Fungi, Bryophyta, Pteridophyta, Gymnosperm
- 12 Branch connected with nomenclature, identification and classification is called \_\_\_\_\_. 1
- (A) Ecology  
 (B) Taxonomy  
 (C) Morphology  
 (D) Physiology
- 13 The smallest unit of living organism is ..... 1
- (A) DNA  
 (B) RNA  
 (C) cell  
 (D) protein
- 14 Basic unit of classification of organisms is ..... 1
- (A) species  
 (B) population  
 (C) class  
 (D) family
- 15 Carl Linnaeus is famous for ..... 1
- (A) coining the term 'systematics'  
 (B) introducing binomial nomenclature  
 (C) giving all natural system of classification  
 (D) all of these
- 16 Which is the first step of taxonomy ? 1
- (A) nomenclature  
 (B) classification  
 (C) identification  
 (D) hierarchical arrangement
- 17 The pseudocoelomate among these is \_\_\_\_\_ 1
- (A) porifera  
 (B) Annelida  
 (C) Mollusca  
 (D) Aschelminthes
- 18 The excretory cells, that are found in platyhelminthes are \_\_\_\_\_ 1
- (A) Nephridia  
 (B) Coller cells  
 (C) Flame cells  
 (D) all above
- 19 Ctenophores commonly known as \_\_\_\_\_ 1
- (A) Flat worms  
 (B) Sea walnuts  
 (C) round worms  
 (D) sponges

- 20 Find the odd 1  
 (A) Sea fan  
 (B) sea horse  
 (C) sea cucumber  
 (D) sea lily
- 21 Terminal mouth occur in 1  
 (A) catla  
 (B) Electric ray  
 (C) shark  
 (D) sting ray
- 22 Salient feature of Arthropoda is 1  
 (A) aquatic and free living  
 (B) chitinous exoskeleton and jointed appendages  
 (C) Radulla  
 (D) None of those
- 23 Ascaris is found in 1  
 (A) body cavity  
 (B) lymph nodes  
 (C) tissue  
 (D) alimentary canal
- 24 The blood of Aves is 1  
 (A) warm  
 (B) cold  
 (C) warm and cold  
 (D) semi worm

### SECTION - B

Section - B consists of 24 questions (Sl. No.25 to 48). Attempt any 20 questions from this section. The first attempted 20 questions would be evaluated.

Question No. 25 to 28 consist of two statements – Assertion (A) and Reason (R).

Answer these questions selecting the appropriate option given below:

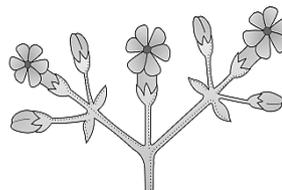
- A. Both A and R are true and R is the correct explanation of A  
 B. Both A and R are true and R is not the correct explanation of A  
 C. A is true but R is false  
 D. Both A and R are False

- 25 **Assertion :** Cell membrane is semipermeable. 1  
**Reason :** The constituent molecules can freely move in the membrane.
- 26 **Assertion:** The endoplasmic reticulum which lacks ribosomes is called smooth endoplasmic reticulum (SER). 1  
**Reason:** SER is mainly involved in protein synthesis.
- 27 **Assertion :** Glycosidic bonds are formed by dehydration. 1  
**Reason :** In polysaccharides, individual monosaccharide is linked by glycosidic bond.
- 28 **Assertion :** DNA molecules and RNA molecules are found in the nucleus of cell. 1  
**Reason :** On heating, enzymes do not lose their specific activity
- 29 Name of the following aestivation type: 1

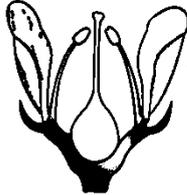
- (A) Valvate  
 (B) Twisted  
 (C) Imbricate  
 (D) Quincuncial



- 30 Identify the inflorescence 1  
 (A) Raceme  
 (B) Spike  
 (C) Helicoid  
 (D) Cymose



- 31 Choose correct option 1
- |  |  |
|--|--|
| Colum 1<br>(p) polydelphous<br>(q) monodelphous<br>(r) diadelphous | Colum2<br>I china rose<br>II pea<br>III citrus |
|--|--|

- (A) P- III, q-I, r-II  
 (B) P- III ,q-II, r- I  
 (C) P-I, q- III ,r-II  
 (D) P-II, q- III ,r-I
- 32 Zygomorphic means the flower is 1  
 (A) Bilateral symmetrical  
 (B) Radial Symmetrical  
 (C) Asymmetrical  
 (D) irregular
- 33 Identify the type of ovary in the given flower 1  
 (A) Hypogynous  
 (B) Superior  
 (C) Perigynous  
 (D) Epigynous
- 
- 34 Epithelial tissues which consists of broad and flat, disc-like cells closely fitted like of a mosaic floor and lines blood vessels is known as 1  
 (A) squamous epithelium  
 (B) epidermal cells  
 (C) endothelium  
 (D) pavement cells
- 35 Where would you find a mast cells? 1  
 (A) adipose tissue  
 (B) areolar tissue  
 (C) yellow fibrous tissue  
 (D) white fibrous tissue
- 36 Fibrous tissue which connects the two bones is 1  
 (A) adipose tissue  
 (B) tendon  
 (C) connective tissue  
 (D) ligament
- 37 A bone is distinguished from cartilage by the presence 1  
 (A) Collagen fibres  
 (B) Lymph vessels  
 (C) Haversian canals  
 (D) Calcified matrix
- 37 The muscles which do not get fatigued are 1  
 (A) striped muscle  
 (B) unstriped muscles  
 (C) cardiac muscles  
 (D) none
- 39 Alveoli of mammalian lung are lined with 1  
 (A) simple cuboidal epithelium  
 (B) ciliated columnar epithelium  
 (C) simple squamous epithelium  
 (D) ciliated cuboidal epithelium
- 40 The tissue which connects bone with muscle is known as 1  
 (A) tendon  
 (B) adipose tissue  
 (C) ligament  
 (D) fibrous tissue
- 41 Mammary glands are 1  
 (A) exocrine gland  
 (B) endocrine glands  
 (C) sebaceous glands  
 (D) alveolar glands
- 42 Which organelle is responsible for degradation of worn out cells? 1  
 (A) Lysosome  
 (B) Golgi apparatus  
 (C) Vacuoles  
 (D) Endoplasmic Reticulum

- 43 This organelle possesses 9+0 structure. 1  
 (A) Cilia  
 (B) Centriole  
 (C) Flagella  
 (D) all
- 44 Which organelle possesses circular DNA? 1  
 (A) Chloroplast  
 (B) Lysosome  
 (C) Ribosome  
 (D) Golgi apparatus
- 45 Middle lamella is made up of which substance? 1  
 (A) Muramic acid  
 (B) Hemicellulose  
 (C) Calcium pectate  
 (D) Phosphoglyceride
- 46 What is correct about Fluid-mosaic model? 1  
 (A) Protein bilayer and phospholipid is included in it.  
 (B) Above protein layer, one layer of phospholipid is present  
 (C) Above protein layer, two layer of phospholipid is present  
 (D) A lipid bilayer and protein included in it.
- 47 Which organelle is observed in animal cell but absent in plant cell? 1  
 (A) Centriole  
 (B) Mitochondria  
 (C) Endoplasmic reticulum  
 (D) Golgi apparatus
- 48 Bacteria possess which type of ribosomes? 1  
 (A) 80S  
 (B) 70S  
 (C) 60S  
 (D) 40S

### SECTION - C

Section-C consists of **one case** followed by 6 questions linked to this case (Q.No.49 to 54).

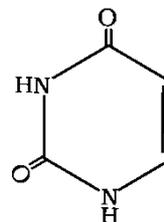
Besides this, 6 more questions are given. Attempt any 10 questions in this section. The first attempted 10 questions would be evaluated.

CASE- The other type of macromolecule that one would find in the acid insoluble fraction of any living tissue is the nucleic acid. These are polynucleotides. Together with polysaccharides and polypeptides these comprise the true macromolecular fraction of any living tissue or cell. For nucleic acids, the building block is a nucleotide. A nucleotide has three chemically distinct components. One is a heterocyclic compound, the second is a monosaccharide and the third a phosphoric acid or phosphate.

- 49 Which one of the following is the major component of chromosome? 1  
 (A) Nucleic acid  
 (B) Protein  
 (C) Nitrogen base  
 (D) Lipid
- 50 Nucleic acid contains which group of molecules in their constitution? 1  
 (A) C, H, N and S  
 (B) C, H, O, N and S  
 (C) C, H, N, O, and P  
 (D) C, H, N and O
- 51 Which are the structural units of DNA? 1  
 (A) Nitrogen base  
 (B) Pentose sugar  
 (C) nucleotide  
 (D) phosphoric acid

52 The illustration given below is which nitrogen base:

- (A) Uracil
- (B) Cytosine
- (C) Thymine
- (D) Ribose



1

53 Which one is not a polymer?

- (A) ATP
- (B) Hemoglobin
- (C) Nucleotide
- (D) Enzyme

1

54 Select the specific base pairs of DNA:

- (A) Adenine and Cytosine
- (B) Guanine and Adenine
- (C) Adenine and Thymine
- (D) Guanine and Uracil

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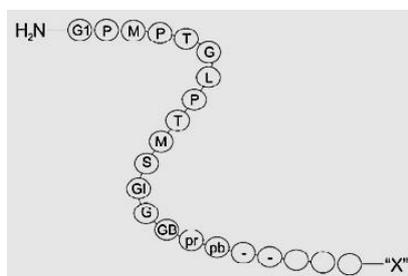
55 Which of the following is not a disaccharide?

- (A) Maltose
- (B) Starch
- (C) Sucrose
- (D) Lactose

1

56 What -'X' indicates in the given figure?

- (A) N-terminal
- (B) P-terminal
- (C) C-terminal
- (D) H-terminal



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57 What is the shape of the three dimensional structure of protein?

- (A) Flat sheet like
- (B) Globular
- (C) Fibrous
- (D) no specific shape

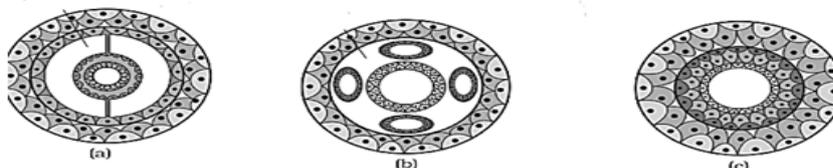
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58 Chemically DNA differs from RNA by:

- (A) Thymine and deoxyribose present in DNA and Uracil and ribose in RNA
- (B) Uracil and deoxyribose in DNA and thymine and ribose in RNA
- (C) Ribose in DNA and ribose in RNA
- (D) Two nucleotide in DNA and one nucleotide in RNA

1

59 In the given diagram, what does 'a', 'b', 'c' represent ?

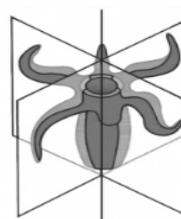


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- (A) a = Coelomate, b = Pseudocoelomate, c = Acoelomate
- (B) a = Coelomate, b = Acoelomate, c = Pseudocoelomate
- (C) a = Pseudocoelomate, b = Pseudocoelomate, c = Acoelomate
- (D) a = Acoelomate, b = Coelomate, c = Pseudocoelomate

60 Symmetry observed in diagram is \_\_\_\_\_

- (A) Bilateral
- (B) Radial
- (C) Asymmetrical
- (D) all of the above



1