



**Combined Class Test (CCT) - 07**

**NOVEMBER 29, 2017**

**Test Code : 07**

Time allowed : 45 minutes.

Maximum marks : 180.

**Instructions**

- There will be negative marking.
- For each correct answer 4 marks will be given.
- For each wrong answer 1 mark shall be deducted.
- Name, Batch and NTB I.D. must be written in the answer sheet.

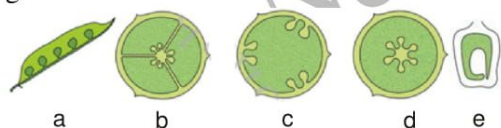
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- Which of the following is a defining characteristic of living organisms  
(A) Growth  
(B) Ability to make sound (D) Reproduction  
(D) Response to external stimuli.
- A structure that connect the cytoplasm of neighbouring cells and another which holds or glues the different neighbouring cell together. These are  
(A) Cell wall and middle lamella respectively  
(B) Plasmodesmata & middle lamella respectively  
(C) Middle lamella and desmosomes respectively  
(D) Middle lamella & Plasmodesmata respectively
- Match the Column I and Column II, select the correct option from options given below  

Column I	Column II
a. Golgi apparatus	(i) Plasma membrane
b. Osmosis	(ii) Cis face & trans face
c. Fluid mosaic model	(iii) Attachment
d. Fimbriae	(iv) Passive transport

(A) a-ii, b-iv, c-iii, d-i (B) a-iii, b-i, c-iv, d-i  
(C) a-ii, b-iv, c-i, d-iii (D) a-iv, b-i, c-iii, d-iii.
- Which layers of ground tissue comprises a single layer of barrel-shaped cells without any intercellular spaces  
(A) Hypodermis (B) Endodermis  
(C) Pericycle (D) Casparian strips.
- Find out correct matching on the basis of given figure



- i- Basal ii- free central  
iii- Parietal iv- Marginal v- Axile  
(A) i - b, ii - c, iii - d, iv - b  
(B) i - e, ii - d, iii - a, iv - c  
(C) i - c, ii - d, iii - a, iv - c  
(D) i - e, ii - d, iii - c, iv - a.

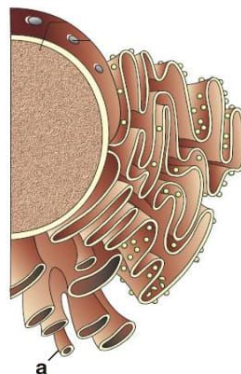
- Difference between virus and viroid is  
(A) Absence of protein coat in viroid but present in virus  
(B) Presence of low molecular weight RNA in virus but absent in viroid  
(C) Both (A) and (B) (D) None of the above.

- Match the column A with column B and choose the correct option.

Column A	Column B
(a) Porifera	i. Canal system
(b) Aschelminthes	ii. Water-vascular system
(c) Annelida	iii. Muscular Pharynx
(d) Arthropoda	iv. Jointed appendages
(e) Echinodermata	v. Metamers
(A) (a)-ii, (b)-iii, (c)-v, (d)-iv, (e)-i	
(B) (a)-ii, (b)-v, (c)-iii, (d)-iv, (e)-i	
(C) (a)-i, (b)-iii, (c)-v, (d)-iv, (e)-ii	
(D) (a)-i, (b)-v, (c)-iii, (d)-iv, (e)-ii.	

- Which of the following statements is true  
(A) The collenchyma occurs in layers below the epidermis in monocotyledonous plants  
(B) Sclerenchyma cells are usually dead and without protoplasts  
(C) Xylem parenchyma cells are living and thin-walled & their cell walls are made up of lignin  
(D) The companion cells are specialised sclerenchymatous cells.
- How many shoot apical meristems are likely to be present in a twig of a plant possessing, 4 leaves and 26 branches  
(A) 26 (B) 27  
(C) 5 (D) 30.

- In the given diagram what is the function of 'a'



- (A) Protein synthesis (B) Lipid synthesis  
(C) Steroidal hormone synthesis  
(D) Both B and C.

- Mucus, saliva, earwax, oil, milk and digestive enzymes are secreted by  
(A) Exocrine glands (B) Endocrine glands  
(C) Heterocrine glands (D) Compound glands.
- Members of Phycomycetes are found in



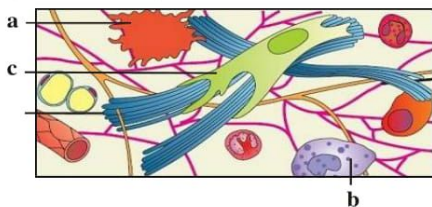
- (i) Aquatic habitats (ii) On decaying wood  
(iii) Moist and dry places  
(iv) As obligate parasites on plants  
Choose from the following options.  
(A) (i), (ii) and (iv) (B) (i) and (iv)  
(C) (ii) and (iii) (D) All of the above.

13. Match the column A and B

Column A					Column B				
(i) Marginal placentation					(a) Marigold				
(ii) Axile placentation					(b) <i>Dianthus</i>				
(iii) Parietal placentation					(c) <i>Argemone</i>				
(iv) Free central					(d) Chinrose				
(v) Basal placentation					(e) Pea				
a	b	c	d	e					
(A) iv	iii	v	ii	i					
(B) v	iii	iv	i	ii					
(C) v	iv	iii	ii	i					
(D) ii	i	v	iv	iii.					

14. When a ..... is suitably stimulated, an electrical disturbance is generated which swiftly travels along its plasma membrane.  
(A) Neuron (B) Muscle fibre  
(C) Myofibril (D) Intercalated disc.
15. Which epithelium play a role to move particle or mucus in a specific direction over the epithelium  
(A) Simple Epithelium  
(B) Ciliated Epithelium  
(C) Glandular Epithelium  
(D) Compound Epithelium.

16. Recognize the figure



- (A) a- Fibroblast, b- Macrophage, c- Mast cell.  
(B) a- Macrophage, b- Mast cell, c- Fibroblast  
(C) a- Macrophage, b- Fibroblast, c- Mast cell  
(D) a- Mast cell, b- Fibroblast, c- Macrophage.
17. Read the assertion and reason carefully to mark the correct option in question.  
(A) If both assertion and reason are true and the reason is the correct explanation of the assertion

- (B) If both assertion and reason are true but reason is not the correct explanation of the assertion  
(C) If assertion is true but reason is false.  
(D) If both assertion and reason are false.

Assertion : In the cell membrane, the nonpolar tail of saturated hydrocarbons is protected from the aqueous environment

Reason : The lipids are arranged within the membrane with the polar head towards the outer sides and the hydrophobic tail towards the inner part.

18. Match the columns I II and III, and choose the correct combination from the options given

Column I	Column II	Column III
a.	1. Mesophyll cell	K. Elongated
b.	2. Tracheid	L. Round and biconcave
c.	3. Red blood cells	M. Amoeboid
d.	4. White blood cells	N. Round and oval

- (A) a-3-M, b-4-L, c-1-K, d-2-N  
(B) a-4-M, b-3-L, c-2-K, d-1-N  
(C) a-3-L, b-4-M, c-1-N, d-2-K  
(D) a-4-L, b-3-M, c-2-N, d-1-K.

19. A plant shows thallus level of organization. It shows rhizoids and is haploid. It needs water to complete its life cycle because the male gametes are motile. It may belong to  
(A) Pteridophytes (B) Gymnosperms  
(C) Monocots (D) Bryophytes.
20. The mature seeds of plants such as gram and peas, possess no endosperm, because  
(A) These plants are not angiosperms  
(B) There is no double fertilization in them  
(C) Endosperm is not formed in them

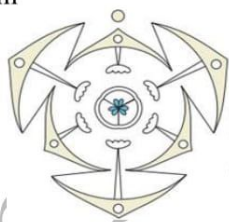
(D) Endosperm gets used up by the developing embryo during seed development.

21. How many of the following statements are related to bone

- It is a specialised connective tissue having hard and pliable ground substance rich in calcium salts and collagen fibres which give bone its strength
- It is the main tissue that provides structural frame to the body
- It support & protect softer tissues & organs
- The bone cells, osteocytes are present in the spaces called lacunae
- They also interact with smooth muscles attached to them to bring about movements

- (A) Two (B) Three  
(C) Four (D) Five.

22. Find out correct option on the basis of above floral diagram



- (A) *Colchicum autumnale* & *Asparagus* are examples of above diagram  
(B) *Gloriosa* & Soyabean are examples of above diagram  
(C) Ashwagandha & Belladonna are examples of above diagram  
(D) Ashwagandha & *Aloe* are examples of above diagram.

23. Match the column I with column II and choose the correct option

Column-I

Column-II

- |                              |                     |
|------------------------------|---------------------|
| a. Open vascular bundles     | 1. Roots            |
| b. Closed vascular bundles   | 2. Monocots         |
| c. Radial vascular bundles   | 3. Dicot stems      |
| d. Conjoint vascular bundles | 4. Stems and leaves |

- (A) a-3, b-2, c-4, d-1 (B) a-3, b-2, c-1, d-4  
(C) a-2, b-3, c-4, d-1 (D) a-2, b-3, c-1, d-4.

24. Which epithelium is found in the ducts of glands & tubular parts of nephron in kidneys

- (A) Simple squamous Epithelium  
(B) Simple Cuboidal Epithelium  
(C) Simple Columnar Epithelium  
(D) Ciliated Epithelium.

25. In some animal groups, the body is found divided into compartments with serial repetition of at least some organs. This characteristic feature is called  
(A) Segmentation (B) Metamerism  
(C) Metagenesis (D) Metamorphosis.

26. Based on their location, muscles are classified into  
(A) Three types-skeletal, smooth & cardiac muscle  
(B) Three types-skeletal, visceral & cardiac muscle  
(C) Three types - voluntary, involuntary and cardiac muscle  
(D) All of the above.

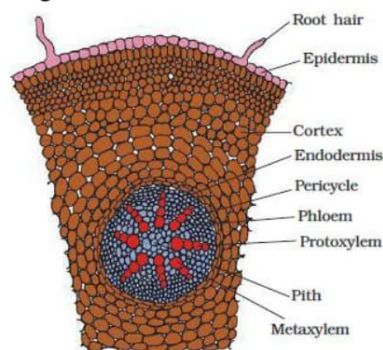
27. Match the following & choose the correct option.

Column I

Column II

- |                             |                  |
|-----------------------------|------------------|
| (a) Adipose tissue          | (i) Nose         |
| (b) Stratified epithelium   | (ii) Blood       |
| (c) Hyaline cartilage       | (iii) Skin       |
| (d) Fluid connective tissue | (iv) Fat storage |
- (A) a-(i), (b)-(ii), (c)-(iii), (d)-(iv)  
(B) a-(iv), (b)-(iii), (c)-(i), (d)-(ii)  
(C) a-(iii), (b)-(i), (c)-(iv), (d)-(ii)  
(D) a-(ii), (b)-(i), (c)-(iv), (d)-(iii).

28. Find out correct option on the basis of following given diagram.



- (A) This is transverse section of monocot root  
(B) This is transverse section of dicot root  
(C) This is transverse section of dicot stem  
(D) This is transverse section of monocot stem.

29. Study the following statements and choose the correct option.

- I. Buds are present in the axil of leaflets of the compound leaf.



II. Pulvinus leaf-base is present in some leguminous plants.

III. In *Alstonia*, the petioles expand, become green and synthesize food.

IV. Opposite phyllotaxy is seen in guava.

- (A) I and IV are correct but II and III are wrong  
(B) I and III are correct but II and IV are wrong  
(C) II and IV are correct but I and III are wrong  
(D) II, III and IV are correct but I is wrong.

30. Bacterial cells have a chemically complex cell envelope. The cell envelope consists of a tightly bound three layer structure i.e. the

- (A) Outermost cell wall followed by the plasma membrane and then the glycocalyx  
(B) Outermost glycocalyx followed by plasma membrane and the cell wall  
(C) Outermost cell wall followed by the glycocalyx and then the plasma membrane  
(D) Outermost glycocalyx followed by the cell wall and then the plasma membrane.

31. Rearrange the following zones as seen in the root in vertical section and choose the correct option

- (a) Root hair zone (b) Zone of meristems  
(c) Root cap zone (d) Zone of maturation  
(e) Zone of elongation

- (A) c, b, e, a, d (B) a, b, c, d, e  
(C) d, e, a, c, b (D) e, d, c, b, a.

32. Match the columns I and II, and choose the correct combination from the options given

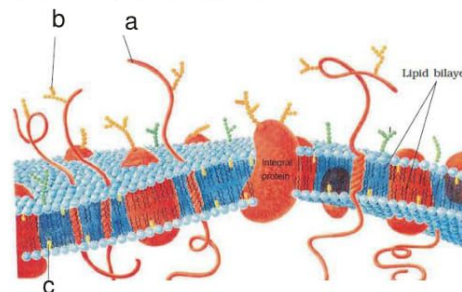
- | Column I                   | Column II                 |
|----------------------------|---------------------------|
| Cell                       | Size                      |
| a. Mycoplasma              | K. 3 to 5 $\mu\text{m}$   |
| b. RBCs                    | L. 10 to 20 $\mu\text{m}$ |
| c. Bacteria                | M. 7 $\mu\text{m}$        |
| d. Typical eukaryotic cell | N. 0.3 $\mu\text{m}$      |
| (A) a-N, b-L, c-K, d-M     | (B) a-K, b-M, c-N, d-L    |
| (C) a-N, b-M, c-K, d-L     | (D) a-K, b-L, c-N, d-M.   |

33. What is correct about monocot stem

- (A) Hypodermis is sclerenchymatous, vascular bundles are closed, phloem parenchyma is absent  
(B) Hypodermis is sclerenchymatous, vascular bundles are open, phloem parenchyma is absent  
(C) Hypodermis is collenchymatous, vascular bundles are closed, phloem parenchyma is present

(D) Hypodermis is sclerenchymatous, vascular bundles are closed, phloem parenchyma is present.

34. Which of the following is correct option on the basis of following figure.



- (A) a-Sugar, b-Protein, c-Cholesterol  
(B) a-Protein, b-Sugar, c-Cholesterol  
(C) a-Protein, b-Cholesterol, c-Sugar  
(D) a-Protein, b-Sugar, c-Cholesterol.

35. Fill in the blanks about lichens

Lichens are symbiotic associations i.e. mutually useful associations, between .....1..... and fungi. Lichens are very .....2..... pollution indicators – they .....3..... grow in polluted areas.

- (A) 1-Bacteria, 3-Bad, 3-Does  
(B) 1-Algae, 3-Good, 3-Do not  
(C) 1-Bacteria, 3-Bad, 3-Do not  
(D) 1-Algae, 3-Good, 3-Does.

36. Read the assertion and reason carefully to mark the correct option in question.

- (A) If both assertion and reason are true and the reason is the correct explanation of the assertion  
(B) If both assertion and reason are true but reason is not the correct explanation of the assertion  
(C) If assertion is true but reason is false.  
(D) If both assertion and reason are false.

Assertion : Golgi apparatus remains in close association with the endoplasmic reticulum

Reason : A number of proteins synthesised by ribosomes on the ER are modified in the cisternae of the GB before they are released from the trans face.

37. Match the column I and column II

- | Column I<br>(Taxon) | Column II<br>(Characteristics) |
|---------------------|--------------------------------|
| a. Aves             | i. Dual habitat                |

- b. Mammalia                      ii. Air bladder  
c. Amphibia                      iii. External ears  
d. Cyclostomata                  iv. Pneumatic bones  
e. Osteichthyes                  iv. Jaw absent

- (A) a-iii, b-ii, c-v, d-iv, e-i  
(B) a-ii, b-iii, c-iv, d-i, e-v  
(C) a-iv, b-iii, c-i, d-v, e-ii  
(D) a-iv, b-iii, c-v, d-ii, e-i.

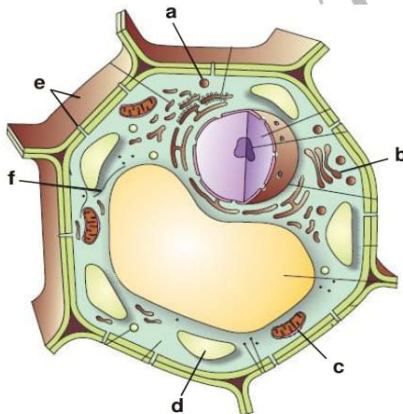
38. In an inflorescence where flowers are borne laterally in an acropetal succession, the position of the youngest floral bud shall be

- (A) Proximal                      (B) Distal  
(C) Intercalary                  (D) Anywhere.

39. Read the following statements and find out the incorrect statement.

- (A) Jute, flax & hemp are sclerenchymatous fibres  
(B) The first formed primary phloem called protophloem consists of bigger sieve tubes and later formed phloem called metaphloem has narrow sieve tubes  
(C) Phloem parenchyma is absent in most of the monocotyledonous  
(D) Bast fibre are made up of sclerenchymatous cells. They are generally absent in the primary phloem but are found in secondary phloem.

40. Recognise the figure and find out the correct matching



- (A) b-lysosome, d-mitochondrion, a-golgi apparatus, f-plasmodesmata, c-chloroplast, d-microtubule  
(B) a-lysosome, c-mitochondrion, b-golgi apparatus, e-plasmodesmata, d-chloroplast, f-microtubule  
(C) a-lysosome, d-mitochondrion, d-golgi apparatus, e-plasmodesmata, b-chloroplast, f-microtubule  
(D) b-lysosome, c-mitochondrion, a-golgi apparatus, e-plasmodesmata, d-chloroplast, f-microtubule.

41. Which structure at some fusion points allow the cell to contract as a unit, i.e., when one cell receives a signal to contract, its neighbour are also stimulated to contract

- (A) Intracalated discs  
(B) Communication Junctions  
(C) Cell Junctions                  (D) Both A & B.

42. Match the column I and column II and select correct option given below.

Column I	Column II
a. <i>Calotes</i>	i. Aves
b. <i>Aptenodytes</i>	ii. Amphibian
c. <i>Hyla</i>	iii. Reptiles
d. <i>Pterophyllum</i>	iv. Mammals
e. <i>Delphinus</i>	v. Pisces

- (A) a—iii, b—i, c—ii, d—iv, e—v  
(B) a—iii, b—ii, c—i, d—iv, e—v  
(C) a—ii, b—iii, c—i, d—v, e—iv  
(D) a—iii, b—i, c—ii, d—v, e—iv.

43. Which structure act as monitor in bacterial transformation with foreign DNA

- (A) Mitochondria                  (B) Plastid  
(C) Chloroplast                  (D) Plasmid.

44. Read the assertion and reason carefully to mark the correct option in question.

- (A) If both assertion and reason are true and the reason is the correct explanation of the assertion  
(B) If both assertion and reason are true but reason is not the correct explanation of the assertion  
(C) If assertion is true but reason is false.  
(D) If both assertion and reason are false.

Assertion : Cell is the fundamental structural and functional unit of all living organisms

Reason : Anything less than a complete structure of a cell does not ensure independent living.

45. A transverse section of stem is stained first with safranin and then with fast green following the usual schedule of double staining for the preparation of a permanent slide. What would be the colour of the stained phloem and xylem?

- (A) Red and green                  (B) Green and red  
(C) Orange and yellow (D) Purple and orange.