

THE JAIN INTERNATIONAL SCHOOL, KANPUR

PRE- TERM-1 (2021-22)

Class XI

Biology (044) Theory

Time: 90 Minutes

Maximum Marks: 50

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.

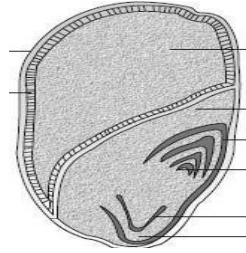
1	Which of the following is not a viral disease? (a) AIDS (b) Herpes (c) Tuberculosis (d) Smallpox
2	Virus envelope is known as: (a) Capsid (b) Virion (c) Nucleoprotein (d) Core
3	Chrysophytes, Euglenoids, Dinoflagellates and Slime moulds are included in the kingdom (a) Monera (b) Protista (c) Fungi (d) Animalia
4	In eubacteria, a cellular component that resembles eukaryotic cells is: (a) Plasma membrane (b) Nucleus (c) Ribosomes (d) Cell wall

5

Which of the following statements are true related to Seed X and Y?



SEED X



SEED Y

	SEED X	SEED Y
a	dicot and endospermic	monocot and endospermic
b	monocot and endospermic	dicot and non-endospermic
c	monocot and non-endospermic	dicot and endospermic
d	dicot and non-endospermic	monocot and endospermic

6

The organism that completely lack a cell wall and are smallest living cell known that can survive without oxygen is

- (a) Virus
- (b) Bacteriophages
- (c) Yeast
- (d) Mycoplasma

7

Lichens show

- (a) Symbiosis
- (b) Commensalism
- (c) Parasitism
- (d) Cooperation

8

Yeast is different from penicillium and Rhizopus in being

- (a) Acellular
- (b) Unicellular
- (c) Having aseptate hyphae
- (d) multicellular

9

By which plant seed habit originated:

- (a) Moss
- (b) Pinus
- (c) Selaginella
- (d) Angiosperm

10

Mycorrhiza is an association between roots of higher plant and fungus. It is an example of

- (a) Parasitism
- (b) Myrmecophily
- (c) Helotism
- (d) Symbiosis

11

A prothallus is

- (a) A structure in pteridophytes formed before the thallus develops
- (b) A gametophyte free living structure formed in pteridophytes
- (c) A sporophytic free living structure formed in pteridophytes
- (d) A primitive structure formed after fertilization in pteridophytes

12	A plant that has seeds but no flowers and fruits? a. Gymnosperms b. Bryophytes c. Mosses d. Pteridophytes
13	Choose the correct pair. (a) Hippocampus – 3-chambered heart (b) Rana – 2-chambered heart (c) Crocodilus – 4-chambered heart (d) Pavo – 3-chambered heart
14	Which one of the following groups of animals is correctly matched with its one characteristic feature without even a single exception? (a) Mammalia: give birth to young ones (b) Reptilia: possess 3-chambered heart with one incompletely divided ventricle (c) Chordata: possess a mouth provided with an upper and a lower jaw (d) Chondrichthyes: possess cartilaginous endoskeleton
15	Which one of the following is NOT a characteristic of phylum Annelida? (a) Ventral nerve cord (b) Closed circulatory system (c) Segmentation (d) Pseudocoelom
16	Sponges exhibit: a. The cellular level of organization. b. Multicellular level of organization. c. Acellular level of organization. d. None.
17	Bioluminescence is prominent in the phylum: a. Porifera b. Ctenophora c. Platyhelminthes d. Nematelminthes
18	The peculiar feature of echinoderm is: a. Closed vascular system b. Blood vascular system c. Water vascular system d. Digestive system
19	The arrangement of sepals or petals in floral bud is called (a) Placentation (b) Aestivation (c) Bracteate (d) Phyllotaxy
20	Blood corpuscles are formed in the (a) Haversian canal (b) endosteum (c) red bone marrow (d) pancreas

21	Fats are richly found in (a) alveolar tissue (b) lymph glands (c) adipose tissue (d) liver cells
22	The term phyllotaxy is used to describe the (a) type of ovary in a plant (b) mode of arrangement of leaves (c) type of roots (d) arrangement of sepals and petals
23	Smooth muscles are: a) Involuntary, cylindrical, striated b) Voluntary, spindle-shaped, uninucleate c) Involuntary, fusiform, non-striated d) Voluntary, multinucleate, cylindrical
24	The cytoplasmic connections from cell to cell are known as (a) middle lamella (b) plasmodesmata (c) cell membrane system (d) endoplasmic reticulum

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. A is False but R is true
25	Assertion: Bacteria are prokaryotic. Reason: Bacteria do not possess true nucleus and membrane bound cell organelles.
26	Assertion: Euglena is called as plant animal. Reason: Pellicle of Euglena is made up of cellulose and not protein.
27	Assertion: Sandfly transmits Kala-azar. Reason: In Kala-azar, the parasite damages the brain.
28	Assertion: <i>Escherichia coli</i> , <i>Shigella</i> sp. and <i>Salmonella</i> sp. are all responsible for diarrhoeal diseases. Reason: Dehydration is common to all types of diarrhoeal diseases and adequate supply of fluids and electrolytes should be ensured.
29	Assertion: Gram-negative bacteria do not retain the stain when washed with alcohol. Reason: The outer face of the outer membrane of gram-negative bacteria contains lipopolysaccharides, a part of which is integrated into the membrane lipids.

30	Assertion: Algae and fungi are grouped in thallophyte. Reason: Algae and fungi show no differentiation in thallus.
31	Assertion: <i>Chlorella</i> could be utilised to keep the air pure in space vehicles. Reason: The space travelers feed on <i>Chlorella</i> soup.
32	Assertion: Members of phaeophyceae vary in colour from olive green to various shades of brown. Reason: Phaeophyceae possess chlorophyll a, c, carotenoids and xanthophylls.
33	Assertion: Rhodophyta is red in colour due to abundant formation of r-phycoerythrin. Reason: r-phycoerythrin is able to absorb blue-green wavelength of light and reflect red colour.
34	Assertion: <i>Spirogyra</i> shows haplontic life cycle. Reason: Zygotic meiosis occurs in <i>Spirogyra</i> .
35	Assertion: Red algae contribute in producing coral reef. Reason: Some red algae secrete and deposit calcium carbonate on their walls.
36	Assertion: Cnidoblasts are present on the tentacles and the body in cnidarians. Reason: Cnidoblasts are used for anchorage, defence and capture of the prey.
37	Assertion: Arthropods are able to survive in adverse conditions. Reason: Arthropods have developed sense organs, compound eyes and taste receptors.
38	Assertion: Water vascular system is the characteristic of echinoderms. Reason: Main function of water vascular system is locomotion.
39	Assertion: Respiration in <i>Amphioxus</i> is done by both water and blood. Reason: <i>Amphioxus</i> is aquatic and possesses blood.
40	Assertion: Bats and whales are classified as mammals. Reason: Bats and whales have four-chambered heart.
41	Assertion: Compound epithelium plays an important role in absorption, secretion and excretion. Reason: Compound epithelium is found in the stomach lining.
42	Assertion: Cartilage (protein matrix) and bone (calcium matrix) are rigid connective tissues. Reason: Blood is connective tissue in which plasma is the matrix.
43	Assertion: Connective tissues are most abundant and widely distributed in the body of complex animals. Reason: Connective tissues link and support other tissues or organs of the body.
44	Assertion: Tendons attach one bone to another bone. Reason: Ligaments attach skeletal muscles to bones.
45	Assertion: The content of the inner compartment of mitochondria is called matrix. Reason: The outer membrane forms a number of infoldings called cristae.
46	Assertion: Centrosomes and centrioles are related to each other. Reason: Centrosome usually contains two cylindrical structures called centrioles.

47	<p>Assertion: The Golgi apparatus mainly performs the function of packaging materials.</p> <p>Reason: Materials to be packed in the form of vesicles from the ER fuse with trans face of the Golgi Apparatus.</p>
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48	<p>Assertion: Plasmids are double-stranded extrachromosomal DNA.</p> <p>Reason: Plasmids are possessed by eukaryotic cells.</p>
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SECTION - C

Section-C consists of two case studies followed by 4 questions linked to each case (Case-A Q. No. 49 to 52; Case-B Q. No. 53 to 56).

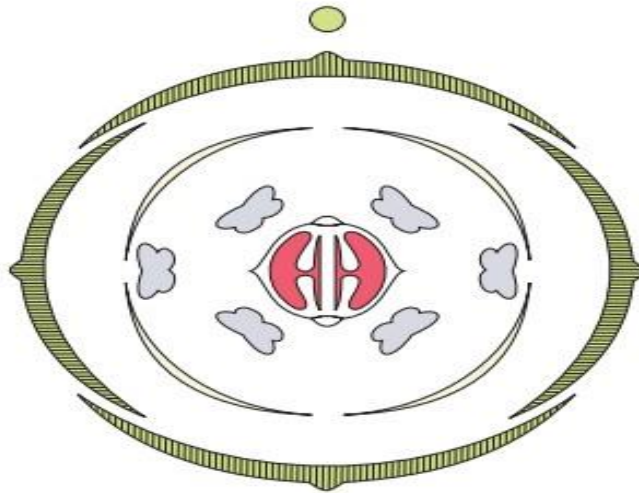
Other questions Q. No. 57 to 60.

Attempt any 10 questions in this section.

The first attempted 10 questions would be evaluated.

Case	<u>Plasma membrane</u>
A	A model was first proposed by S.J. Singer and Garth L. Nicolson in 1972 to explain the structure of the plasma membrane. The model has evolved somewhat over time, but it still best accounts for the structure and functions of the plasma membrane as we now understand them. This model describes the structure of the plasma membrane as a mosaic of components including phospholipids, cholesterol, proteins, and carbohydrates that gives the membrane a fluid character.
49	<p>Name the model proposed by S.J. Singer and Garth L. Nicolson in 1972 to explain the structure of the plasma membrane.</p> <p>A. lipid bilayer hypothesis B. Cell membrane Theory C. Quacimolecular model D. Fluid mosaic model</p>
50	<p>According to Singer and Nicolson, the main fabric of the membrane is composed of-</p> <p>A. phospholipids B. cholesterol C. proteins D. carbohydrates</p>
51	<p>Which type of molecules provide an ice bergs appearance in the structure of plasma membrane?</p> <p>A. phospholipids B. cholesterol C. Integral proteins D. Extrinsic Protein</p>
52	<p>Plasma membrane is</p> <p>(a) impermeable (b) semi-permeable (c) completely permeable (d) differentially permeable</p>

**Case
B**



Floral diagram with floral formula

Study the given figure represent the floral diagram of the plant *Brassica campestris* and answer any four of the following questions.

53	<p>The given flower is-</p> <p>(a) gamosepalous, polypetalous, zygomorphic (b) polysepalous, gamopetalous, zygomorphic (c) gamosepalous, polypetalous, actinomorphic (d) polysepalous, polypetalous, actinomorphic</p>
54	<p>The no. and type of stamens in the flower is</p> <p>(a) 4, monadelphous (b) 6, diadelphous (c) 4, Polyandrous (d) 6, Polyandrous</p>
55	<p>Flower is –</p> <p>(a) Epigynous (b) Hypogynous (c) Perigynous (d) Exogynous</p>
56	<p>Identify the type of placentation</p> <p>(a) Marginal (b) Parietal (c) Axile (d) Free central</p>
57	<p>Select the mismatch:</p> <p>a) Pinus – Dioecious b) Cycas – Dioecious c) Salvinia – Heterosporous d) Equisetum – Homosporous</p>

58	An example of colonial alga is... a) Chlorella b) Volvox c) Ulothrix d) Spirogyra
59	Double fertilization is exhibited by a) Gymnosperms b) Algae c) Fungi d) Angiosperms
60	Which one of the following statement is wrong? a) Agar-agar is obtained from Gelidium and Gracilaria b) Laminaria and Sargassum are used as food c) Algae increase the level of dissolved oxygen in the immediate environment d) Algin is obtained from red algae, and carrageenan from brown algae.

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