B.K. BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLS
A CBSE DAY-CUM-BOYS' RESIDENTIAL SCHOOL

TERM-I EXAMINATION 2026-27
BIOLOGY (044)
SET-I

Class: XI | Duration: 3 Hours
Date: 09/09/2026 | Max. Marks:70
Admission no: | Roll no:

General Instructions:

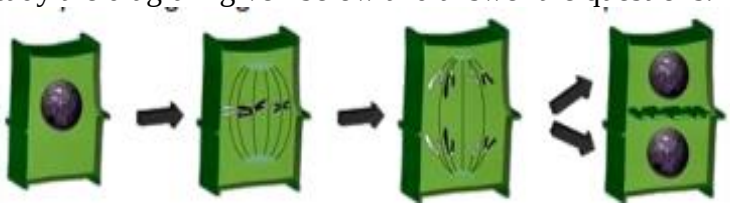
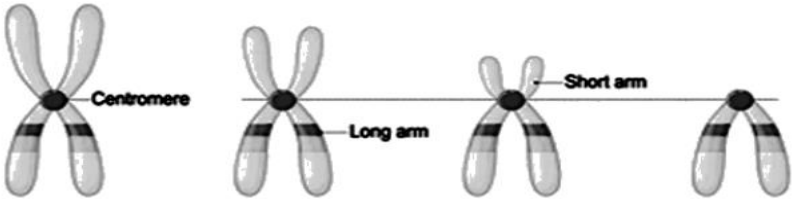
(i) All questions are compulsory.
(ii) The question paper has five sections and 33 questions.
(iii) Section–A has 16 questions of 1 mark each; Section–B has 5 questions of 2 marks each; Section– C has 7 questions of 3 marks each; Section– D has 2 case-based questions of 4 marks each; and Section–E has 3 questions of 5 marks each.
(iv) There is no overall choice. Answer all 33 questions. However, internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.
(v) Wherever necessary, neat and properly labeled diagrams should be drawn.

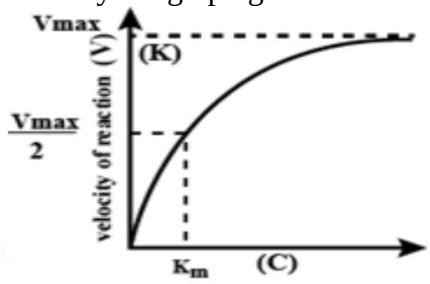
SECTION-A

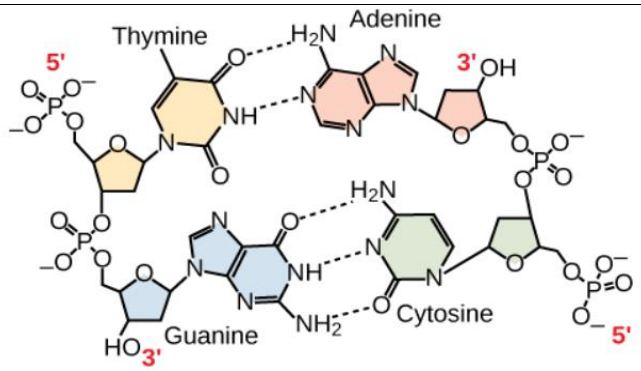
Q. No. 1 to 12 are multiple choice questions. Only one of the choices is correct. Select and write the correct choice as well as the answer to these questions.

Q.no	Question	Marks
1.	Genus represents (a) an individual plant or animal (b) a collection of plants or animals (c) a group of closely related species of plants or animals (d) None of the above	1
2.	In Solanum tuberosum, first and second words stand for, respectively (a) genus, generic name (b) specific epithet, species (c) specific name and generic name (d) generic name and specific name	1
3.	*Trypanosoma* causes (a) sleeping sickness (b) cholera (c) malaria (d) food poisoning	1
4.	Which of the following group is considered as primitive relatives of animals? (a) Chrysophytes (b) protozoans (c) Euglenoids (d) Slime moulds	1
5.	The organic compounds that are tightly bound to apoenzyme are known as: A. Co – factors B. Holoenzyme C. Prosthetic group D. Co-enzyme	1
6.	Double fertilisation is a characteristic feature of which plant group? A. Algae B. Gymnosperms C. Angiosperms D. Pteridophytes	1
7.	Cloaca is an organ for: A.Reproduction B. Excretion C. Both A and B D. Neither A nor B	1
8.	During anaphase-I of meiosis a. Homologous chromosomes separate	1

	b. Non-homologous autosomes separate c. Sister chromatids separate d. Non-sister chromatids separate	
9.	Select the correct statement about G1 phase a. Cell is metabolically inactive b. DNA in the cell does not replicate c. It is not a phase of synthesis of macromolecules d. Cell stops growing	1
10.	Which of the following is not correct? a.Robert brown discovered the cell. b.Schleiden and Schwann formulated the cell theory. c.Virchow explained that cells are formed from pre-existing cells. d.A unicellular organism carries out its life activities within a single cell.	1
11.	Carbon dioxide combines with haemoglobin to form (a) Carboxy haemoglobin (b) Carbamino haemoglobin (c) Oxyhaemoglobin (d) Amino haemoglobin	1
12.	Emphysema is characterised by: (a) Permanent enlargement and destruction of alveolar area leading to reduction in respiratory surface (b) Inhibition of respiratory centre (c) Accumulation of fluid in lungs (d) Spasm of muscles of trachea	1
	Question No. 13 to 16 consist of two statements – Assertion (A) and Reason (R). Answer these questions by 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.	
13.	Assertion (A): Frogs have the ability to change colour to hide from enemies. Reason(R): They are poikilotherms.	1
14.	Assertion (A): Some cells in adult animals do not appear to exhibit division (e.g., heart cells). Reason (R): These cells exit the G1 phase to enter an inactive stage called the quiescent stage G0 and stop dividing further unless called upon.	1
15.	Assertion: Kingdom-Protista forms a link between monerans and the other organism like plants, animal and fungi. Reason: Protist reproduce sexually and asexually by a process involving cell fusion and zygote formation.	1
16.	Assertion: Bacteria are prokaryotic. Reason: Bacteria do not possess true nucleus and membrane bound cell organelles	1
	SECTION-B	
17.	Attempt either option A or B. A.(i) Fern prothallus is monoecious. Justify. (ii) Mention the two stages in the life cycle of a moss. OR B.(i) Both gymnosperms and angiosperms bear seeds. But, why are they classified separately? (ii) Conifers are better adapted to cold, temperate climate. How?	2

18.	A. What is the significance of mitosis?	2
19.	Explain the composition of triglyceride.	2
20.	Explain how the frogs protect their eyes while in water. State the significance of webbed digits in frog.	2
21.	Study the diagram given below and answer the questions.  (i) Write down the consequence if cytokinesis and duplication of DNA do not occur during Mitosis. (ii) How cytokinesis in plant cell is different from that in animal cell?	2
	SECTION-C	
22.	A. What does ICBN stands for? B. A ball of snow when rolled over snow increases in mass, volume and size. Is this comparable to growth as seen in living organisms? Why?	3
23.	Why are viruses called obligate parasites? Explain the special features of euglenoids.	3
24.	Differentiate between the three main classes of algae based on their pigment composition.	3
25.	a) Distinguish between Vital Capacity and Total Lung Capacity. What is the role of the carbonic anhydrase enzyme in the transport of gases during respiration?	3
26.	The diagram given below shows the different types of chromosomes.  A. How many chromosomes does a human cell have? What is the approximate length of DNA they possess? B. Give a technical term to the type of chromosomes that has (a) two equal arms, (b) one arm much longer than the other. C. Are kinetochore and centromere the same?	3
27.	Attempt either option A or B. A. (a) The following events occur during the various phases of the cell cycle. Name the phase against each of the events. (i) Disintegration of nuclear membrane (ii) Appearance of nucleolus (iii) Division of centromere (iv) Replication of DNA (b) How does movement of chromosome occur during mitotic phase? OR B. (i) Differentiate between the events of mitosis and meiosis. (ii) An organism has two pair of chromosomes (i.e., chromosome number = 4). Diagrammatically represent the chromosomal arrangement during different phases of meiosis II.	3

28.	Read the following and answer the questions that follows: Proteins are polypeptides or linear chains of amino acids linked by peptide bonds. Amino acids are organic compounds containing and amino group and an acidic group as substituent on the same carbon; they are also considered as substituted methane. A. What are essential amino acids? B. Why are proteins called heteropolymers and not homopolymers? C. Why does an enzyme catalyse only one kind of a reaction?	3
	SECTION-D	
29.	The vascular system of a frog is well-developed closed type. Frogs have a lymphatic system also. Special venous connections are present. a) What is the composition of frog's blood? b) Write a short note on the structure of frog's heart. c) Name the two special venous connections in frog.	4
30.	In a remote, moist valley of the Himalayas, Dr Shah discovers a vast expanse of lush green growth covering the forest floor. He initially identifies the organisms as mosses. Upon closer inspection, he notices that the main plant body is soft, small, and non-woody, lacking true roots. He also observes tiny, stalked structures (sporophytes) growing out from the green cushion-like body. These sporophytes appear to be dependent on the main green plant for nutrition. The area remains damp year-round, and occasional heavy rainfall causes water to flow over the ground. A. Identify the group of the plant kingdom to which these organisms belong, and justify your identification with two features. B. Why are bryophytes considered crucial for ecological succession on bare rocks or soil? Attempt either subpart C or D. C. Why are bryophytes often referred to as the "amphibians of the plant kingdom"? OR D. What is the ploidy (n or 2n) of the main "lush green growth" plant body, and what is the ploidy of the "tiny stalked structures" growing from it?	4
	SECTION-E	
31.	Attempt either option A or B. A. Study the graph given and answer the questions that follow:  (i) What is this graph depicting? (ii) Formation of ES complex is the first step in catalysed reactions. Describe the other steps till the formation of product. (iii) Why the reaction after reaching Vmax does do not further exceed after increasing substrate concentration? (iv) Give one example of competitive inhibition. OR B. Study the diagram given below and answer the questions that follow:	5

	 (i) Identify the image shown. (ii) What is the backbone of this structure made up of? (iii) Name purine bases from diagram. (iv) What is the difference between a nucleotide and nucleoside?	
32.	Describe the following: a) kinetochores b) Bivalent c) interkinesis Draw a diagram to illustrate metaphase and anaphase of mitosis. OR Explain the phases of Prophase I of meiosis I.	5
33.	Mention the main steps by which respiration takes place in humans. **OR** How is respiration regulated by medulla?	5

**********ALL THE BEST**********