

KENDRIYA VIDYALAYA SANGHATHAN
CLASS XII BIOLOGY (044) SAMPLE PAPER FOR PRACTICE
2022-23

Maximum Marks: 70

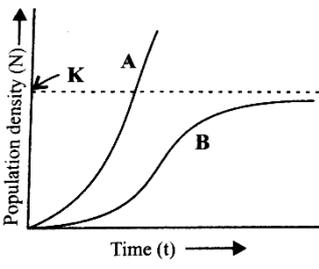
Time: 3 hours

General Instructions:

- ✓ All questions are compulsory.
- ✓ The question paper has five sections and 33 questions. All questions are compulsory.
- ✓ 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.
- ✓ There is no overall choice. However, internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.
- ✓ Wherever necessary, neat and properly labeled diagrams should be drawn.

Q. No	Questions	Marks
SECTION A		
1	Which statement is significant in reference to test tube baby- (a) Fertilization occurs in invitro condition (b) Fertilization and embryo development take place in a test tube (c) Ova is proliferated in the test tube outside the ovary (d) Fertilization occurs in the fallopian tube and embryogenesis takes place test tube	1
2	Copper-related IUDs act as a contraceptive method as these- (a) Suppress movement of cilia in fimbriae (b) Suppress fertilizing capacity of sperm (c) Block cervix which doesn't allow the sperm to pass through it (d) Delayed oogenesis	1
3	dNTPs are required for- (a) As a source of nucleotides (b) As a source of energy (c) Formation of phosphodiester bond (d) All of these	1
4	Select the factor which is an attribute of a population. (a) Sex ratio (b) Ecological niche (c) Carrying capacity (d) None of these	1
5	ELISA technique is based on- (a) Antibody – Antibody interaction (b) Antibody-Antigen interaction (c) Antigen-Antigen interaction	1

	(c) Larger surface area related to their volume (d) All are correct	
<p>Questions No. 13 to 16 consist of two statements – Assertion (A) and Reason (R). Answer these questions by selecting the appropriate option given below:</p> <p>(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.</p>		
13	Assertion: In a Grazing food chain energy is derived from the sun. Reason: it starts with dead plants, and fallen leaves and releases a large amount of energy.	1
14	Assertion: “AI” technique is very successful for those males who have low sperm count. Reason: In this semen collected from the husband or healthy donor is artificially inseminated into the vagina of the female.	1
15	Assertion: Haemophilia is an autosomal-linked disorder. Reason: Its gene is located on the X-chromosome.	1
16	Assertion: Contact inhibition is a process of arresting cell growth when cells come in contact with each other. Reason: Cancerous cells lost properties of contact inhibition.	1
SECTION B		
17	(a) Which characteristic of pollen grain enables these to be preserved as a fossil? (b) List one characteristic feature of the pollen and stigma of wind-pollinated flowers.	2
18	Mention the scientific name of the animal on which T. H. Morgan perform his experiment. Why did he prefer to work with that animal? Give any three reasons.	2
19	(a) Write two examples of SCP belonging to algae and bacteria. (b) Why secondary treatment of sewage requires aeration?	2
20	Gene Z (beta-galactosidase) is a marker gene. By using the insertional inactivation technique, we can identify recombinants and non - recombinants. Give reason	2

21	<p>Study the given graph and answer the given questions-</p> <p>(a) Label "A" and "B"</p> <p>(b) What is "k"?</p> <p>(c) Which curve is more common in nature?</p>		2
OR			
How do alien species invasion in a region affect the survival of native species? Give one example.			

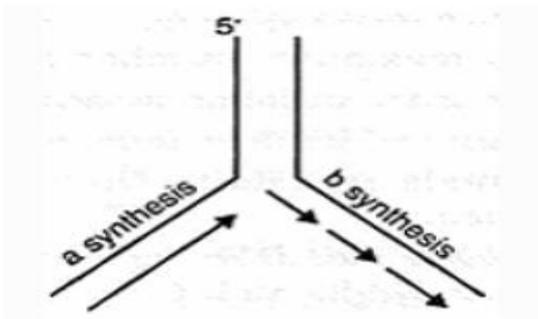
SECTION- C

22	<p>(a) Write the difference between morula and blastocyst.</p> <p>(b) Mention the condition of disintegration of the endometrium.</p> <p>(c) Which structure is formed along with the secondary oocyte?</p>	3
23	What is the importance of outbreeding devices? Explain various methods of outbreeding devices in flowering plants.	3
24	Ribosome plays an important role in the translation process. List any three important functions of ribosomes during the process.	3
25	<p>(a) Name the type of evolution that has resulted in the development of structures like the wings of butterflies and birds. What are such structures called?</p> <p>(b) What is adaptive radiation? Give one example.</p> <p>(c) Biochemical similarities among diverse organisms can be helpful in the study of evolution. Give one example in favour of your answer.</p>	3
26	<p>Explain the life cycle of retrovirus in human beings by giving a diagram only.</p> <p style="text-align: center;">OR</p> <p>(a) Write the chemical name of the smack.</p> <p>(b) Name the plant and its part which is used to isolate cannabinoids.</p> <p>(c) Give example of any two drugs used for the treatment of mental illnesses like depression and insomnia.</p>	3
27	<p>(a) Explain the procedure of obtaining Nematode resistance tobacco plant.</p> <p>(b) Write two roles of PCR in molecular diagnosis technique.</p>	3
28	How did Paul Ehrlich contribute to the study of biodiversity?	3

SECTION- D

29	A biological control agent is an organism, such as an insect or plant disease, that is used to control a pest species. Scientists have been able to produce	4
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	<p>Bt cotton using the genes of bacteria. Such plants are resistant to attack by insect pests. Besides bacteria, fungi and viruses are also used as biological control agents. These are effective biocontrol agents for several plant pathogens. Some viruses are an excellent source for species-specific, narrow-spectrum insecticidal applications. Organisms like beetles, wasps can also be used as biocontrol agents to stop introduced weeds and insects from damaging natural habitats, taonga species, and farms in an environmentally friendly way. Biocontrol agents should be safe, effective, cheap and easy to use.</p> <p>(a) Name one virus which is used as a biocontrol agent. (b) Which fungus is used as a biocontrol agent which is characterized by free-living and common in root ecosystems? (c) Name to organism used to get rid of aphids and mosquitoes. (d) To develop Bt cotton, gene of which microorganism is used?</p>	
30	<p>A chromosomal abnormality, chromosomal anomaly, chromosomal aberration, chromosomal mutation, or chromosomal disorder, is a missing, extra, or irregular portion of chromosomal DNA. Some common examples are Down syndrome, Klinefelter syndrome and Turner syndrome. There is no cure for a chromosomal disorder. Once a child is born, they will require therapy from a multi-disciplinary team to learn to manage their symptoms. Genetic therapies are approaches that treat genetic disorders by providing new DNA to certain cells or correcting the DNA.</p> <p>(a) What is the main reason behind abnormal chromosome numbers in the fetus? (b) Karyotype 45 A + XY (i.e., 47 chromosomes) is characterized by which chromosomal disorder? (c) Overall masculine development with feminine features e.g., Development of breast (Gynecomastia) is related to which disorder? (d) Write karyotype of Turner's syndrome.</p>	4
SECTION- E		
31	<p>Observe the given diagram carefully and answer the questions-</p> <div> </div> <p>a- Define and explain the process. b- Which type of dye is used in the process to visualize DNA? c- Why are some DNA fragments and others larger?</p> <p style="text-align: center;">OR</p> <p>Explain the steps in the formation of recombinant DNA by Eco RI by giving a suitable diagram.</p>	5

32	<p>Explain the anatomy of the mammary gland of a human female.</p> <p style="text-align: center;">OR</p> <p>Describe the following –</p> <ul style="list-style-type: none"> (a) Spermiation (b) Two layers of ovum (c) LH Surge (d) Acrosome (e) fetal ejection reflex 	5
33	<ul style="list-style-type: none"> i- Why did Hershey and chase use radioactive ^{32}P and ^{35}S in their experiment. ii- Explain the importance of genetic code. <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> i- Observe the diagram and write the answers of questions given below- <div style="text-align: center;">  </div> <ul style="list-style-type: none"> a- Label "a" and "b". b- Name the enzyme involved in the process c- B has fragmented strands. Give reason. <ul style="list-style-type: none"> ii- What is Chargaff rule? 	5