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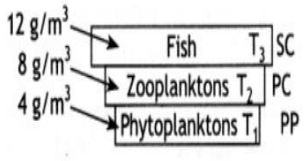
CLASS XII BIOLOGY (044) SAMPLE PAPER FOR PRACTICE
2022-23

Maximum Marks: 70 **Time: 3 hours**

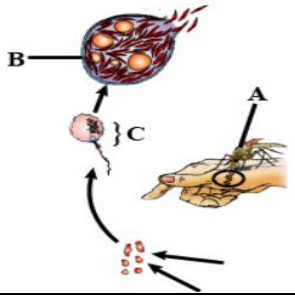
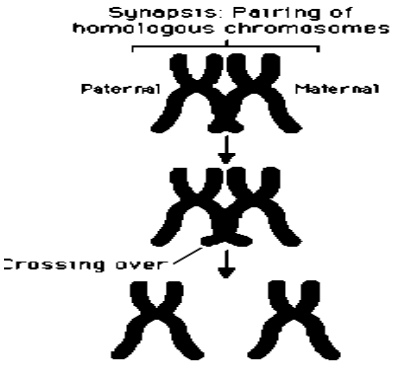
General Instructions:

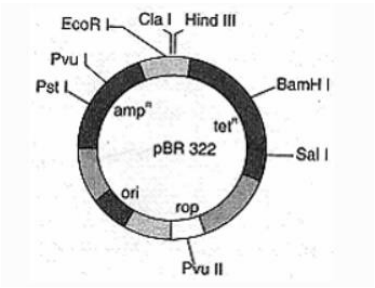
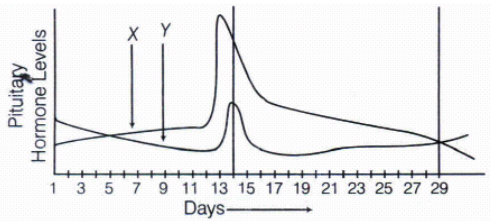
- ✓ All questions are compulsory.
- ✓ The question paper has five sections and 33 questions. All questions are compulsory.
- ✓ Section–A has 16 questions of 1 mark each; Section–B has 5 questions of 2 marks each; Section– C has 7 questions of 3 marks each; Section– D has 2 case-based questions of 4 marks 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	After diagnosis it is found that fallopian tube of a lady is blocked. Which of the following ART is useful for her- (a) IVF (b) ZIFT (c) GIFT (d) ICSI	1
2	Which ion is generally used in IUDs- (a) Cl (b) Cu (c) Ca (d) CO_3	1
3	Which is not essentially required in replication- (a) Primer (b) dNTPs (c) Ori (d) All of these	1
4	What is proved by the phenomenon of resistance to DDT in mosquitoes? (a) Artificial hybridization (b) Migration (c) Natural selection (d) Inbreeding depression	1
5	Function of interferons is related with - (a) Release of cytokinin (b) Acts against virus infected cell (c) Protect non infected cells (d) All of these	1
6	PMNL- neutrophils belongs to which types of immunity - (a) Physical barriers	1

	(b) Physiological barriers (c) Cellular barriers (d) Cytokine barriers	
7	The pesticides enter a food chain and subsequently get into our body represents - (a) Eutrophication (b) Biomagnification (c) Accelerated eutrophication (d) Ecological succession	1
8	Identify incorrect statements about Ti plasmid- a- It is isolated from Agrobacterium tumefaciens b- It is tumor-inducing plasmid. c- It is used in its natural form to create GMOs d- It uses does not harm the plants and only delivers the gene of interest.	1
9	observe the diagram and answer- a- It represents pyramid of energy in an aquatic ecosystem b- It represents population density (N) in an aquatic ecosystem c- It represents pyramid of biomass in an aquatic ecosystem d- It represents eutrophication in an aquatic ecosystem 	1
10	Read the statements and answer- i- Mycorrhiza is association between fungus and roots of higher plants ii- In brood parasitism parasitic bird lay her egg in nest of host iii- Liver fluke and lice are example of ectoparasite iv- Cuscuta is parasitic plant a- (i), (ii) and (iii) are correct b- (i), (ii) and (iv) are correct c- (i), (ii), (iii) and (iv) are correct d- All are incorrect	1
11	Identify the factors which increases population growth- a- Immigration and natality b- Immigration and mortality c- Natality and mortality d- Emigration and immigration	1
12	The DFC in any ecosystem begins with - (a) Decomposers (b) Inorganic material (c) Detritus (d) Consumers	1
	Questions 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.	1

	(c) A is true but R is false. (d) A is False but R is true.	
13	Assertion: Of the incident solar radiation < 50 % of it is PAR. Reason: PAR is photosynthetically active radiation available for plants.	1
14	**Assertion**: lactational amenorrhea is a method of natural contraception. **Reason**: In this condom is used which is safest method of contraception.	1
15	**Assertion**: Mendel crossed a tall plant from F2 generation dwarf plant and named it as test cross. **Reason:** In a typical test cross an organism showing a dominant phenotype is crossed with recessive parent instead of self-crossing.	1
16	**Assertion**: Immunoglobins basically proteinaceous in nature. **Reason:** These are related with the humoral immunity.	1
	SECTION B	
17	(a) Flowering plants shows self-incompatibility phenomenon. What do you understand by term self-incompatibility? (b) Where we can observe the filiform apparatus in a flower? Mention its role.	2
18	Sheela has normal vision but her father is colour blind. Sheela married a normal visioned man. Find out probability of their children to be colour blind.	2
19	Write one difference between a- Active and passive immunity b- Contact inhibition and metastasis	2
20	(a) What is the principle behind using very high temperature during polymerase chain reaction? (b) Write advantage of primers in PCR.	2
21	By graphical representation show that Log S = log C + Z log A **OR** What were the observations of David Tilman about species diversity in an ecosystem. Mention the value of regression coefficient for frugivorous birds.	2
	SECTION– C	
22	(a) Which cell provide nutrition to the germ cells in seminiferous tubule. (b) Write role of bulbourethral glands in male. (c) Name the duct through which milk is sucked out.	3
23	(a) How Many times reductional division is required for pollen mother cell to produce 64 microspores? (b) How tapetum and production of viable male gametophytes are linked? (c) Illustrate significance of emasculation.	3
24	Compare the termination of transcription and translation process. What types of factors involved in the process.	3

25	(a) Write the method of evolution that has brought the similarity as seen in tuber of potato and sweet potato. (b) Compare Dryopithecus and Ramapithecus (c) Who disproved spontaneous generation theory.	3
26	Explain withdrawal syndrome. Also mention two symptoms related to this. OR Study the given diagram and answer the followings; (a) Name the pathogen responsible for this cycle (b) Identify 'A' (c) In which organ event 'C' takes place (d) Identify the organ 'B' 	3
27	(a) How gene of interest is transferred to a host using biolistic method? (b) What is advantage of heat and shock method in biotechnology? (c) Disarmed pathogens may be a good tool for r-DNA technology. Give reason	3
28	(a) Name any one man made ecosystem with high productivity. (b) Which region of Meghalaya is well known for sacred grooves. (c) List any two reasons that could have triggered mass extinctions of species in the past?	3
	SECTION– D	
29	Microbes are beneficial as well as detrimental to the welfare of human beings. Microbes are an excellent boon for commercial and industrial purposes. They are used in pharmaceutical industry, sewage treatment plants as well as production of chemicals like alcohol, enzymes and organic acids. Various microbes re used in production of SCP, Biofertilizers and biogas. (a) Which microorganism is used in production of immunosuppressive drug. (b) How flocs affect the BOD of a water body. (c) Who discovered the full effectiveness of penicillin? (d) How streptococcus is used to treat heard disorder?	4
30	The production of an offspring which contains different combinations of traits compared to their parents is known as recombination. Crossing Over: The exchange of DNA segments between non-sister chromatids during the synapsis is known as crossing over. All organisms have a large number of genes, their number being much more than the number of chromosomes. All genes on the same chromosome do not assort independently and therefore, provide another exception to Mendel's laws of inheritance. 	4

	Genes whose patterns of inheritance deviate from that of independent assortment are often linked. a- Mention relation of distance between genes in linkage. b- In which condition the percentage of people that cross over is higher? c- linkage occurs on which chromosome usually and why? d- Who laid concept of linkage?	
	SECTION– E	
31	Answer the questions based on the given diagram –  a- Write the role of ori. b- What is the method of nomenclature of EcoRI. c- What are selectable markers? Give one example of such markers. OR What is gene therapy? Describe methods of gene therapy using the example of adenosine deaminase (ADA) deficiency?	5
32	Observe the diagram and answer the followings-  a- Identify x and y b- How corpus luteum is associated with implantation. c- What happens to the corpus luteum in the absence of fertilisation of the ovum. **OR** a- Diagrammatically represent the stages of human embryo development inside female. b- What is importance of umbilical cord.	5
33	Explain positive and negative regulation of the Lac operon. **OR** (a) What is initiator tRNA? (b) Not the complete mRNA is involved in translation. Explain. (c) Describe any two steps which are required for processing of hn m RNA in eukaryotic cell.	5