

BOTANY

I Answer all the questions -1 Mark each 3

1. In some seeds remnants of nucellus are seen called
2. The nutritive layer present in anther wall called
3. The most commonly reared Honey bee in India is

II Answer any Three of the following – 2 Marks each 6

4. Mention different strategies evolved to prevent self pollination in flowers?
5. Arrange in correct order
Pollen grains, Sporogenous tissue, Microspore tetrad, Pollen mother cell
6. Which part of the plant is best suited for making virus-free plants & why?

7. What is vegetative propagation? Give two suitable examples

8. What are the features seen in an anemophilous flower ?

III Answer any Two of the following – 3 Marks each 6

9. With a neat diagram explain 7-celled 8-nucleate nature of female gametophyte
10. Outbreeding is crossing of unrelated animals.
Explain three different types of outbreeding.
11. With the help of a neat diagram, explain the structure of ovule.

ZOOLOGY

I Answer all the questions -1 Mark each 3

1. Ovulation is induced by a hormone called
2. 44A+XO : ;; 44A + XXY : Klinefelter's Syndrome
3. Foetal sex determination by analysing amniotic fluid is called

II Answer any Three of the following – 2 Marks each 6

4. In which part of the female reproductive system the following events occur a) Fertilisation b) Implantation
5. Expand the following a) ZIFT b) ICSI
6. In a monohybrid cross a geneticist got same genotypic and phenotypic ratio a) Identify the phenomenon. b) Spot an example
7. After delivery, doctor advised the mother that the newborn should be given the first milk. a) Name the first milk b) write its significance
8. a) Monohybrid ratio : 9:1;; Dihybrid ratio :
b) Trisomy: $2n+1$;; Monosomy :

III Answer any Two of the following – 3 Marks each 6

9. Expand IUD b) Classify different types of IUDs
10. Placenta acts as an endocrine organ. a) Justify the statement.
b) Write any two functions of placenta
11. Haemophilia is a hereditary sex linked recessive blood disease in man.
a) How haemophilia is also called bleeder's disease?
b) Write the genotypes of Males and Females showing Normal, Carrier and diseased condition.

BOTANY

I Answer all the questions -1 Mark each 3

1. The stain used in Gel electrophoresis to identify isolated DNA is ...
2. is the Transgenic cow which produce human milk protein.
3. In RNA interference silencing is done to terminate function of

II Answer any Three of the following – 2 Marks each 6

4. Name two basic type of competition found among organisms.
Which one is more intense and why?
5. Name the naturally occurring Plasmids in E-coli and Agrobacterium.
Name an artificially reconstructed Plasmid.
6. How mature functional Insulin hormone different from its Pro-hormone?
7. Expand PCR . Write the main steps in PCR. Which enzyme used in this?
8. What are the benefits of Genetically Modified crops?

III Answer any Two of the following – 3 Marks each 6

9. The gene responsible for starting of replication is called ori.
Write three characters of ori.
10. Endotherms are advantageous over other organisms. Give reason.
Write the name of two groups of endotherms.
11. What is gene therapy? How it applied to correct ADA deficiency.

ZOOLOGY

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1. Formation of DNA from RNA is called
2. Theory of Use and Disuse of organs put forward by
3. Name the causative organism of Malaria .

II Answer any Three of the following – 2 Marks each 6

4. Categorise the following into two groups by giving suitable headings
(Adenine, Guanosine, cytosine, Uracil, Thymine, Cytidine)
5. Spot one example each of homologous and analogous organs in animals.
6. Differentiate between Primary and Secondary lymphoid organs.
7. Find the odd one out with reason(UAA , AUG , UAG , UGA)
8. Arrange the following in heirarchical order
(Homo sapiens, Rama pithecus, Homo erectus , Australo pithecines)

III Answer any Two of the following – 3 Marks each 6

9. Expand AIDS. AIDS Pont out its cause and preventive measures.
10. Allele frequency in a population are stable and is constant from generation to Generation.
a) Name this equilibrium b) Mention the factors affecting this equilibrium.
11. a) Differentiate Exons and Introns.
b) What you meant by Capping and Tailing of making up of mRNA.

BOTANY

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1. The rate of biomass production is called
2. The percentage of Carbon Dioxide in the atmosphere is
3. The layer of atmosphere where good ozone found in

II Answer any Three of the following – 2 Marks each 6

4. Construct a pyramid of Biomass starting with Phytoplankton.
Label its three levels. Is the pyramid is upright or inverted . why?
5. Solid waste can create a major problem in metro cities.
Point out ways to safely dispose the solid wastes.
6. Some organisms related with pond ecosystem is listed below.
Tadpole, Fish, water, Plants, Kingfisher.
a) construct a food chain b) Explain trophic levels
7. Expand CFC and BOD. How do they affect the environment?
8. Global warming is serious problem to the entire world. Explain.

III Answer any Two of the following – 3 Marks each 6

9. Write any three limitations of Ecological pyramids.
10. What the harm do thermal power plants cause to the environment.
Mention two precautions that could be taken to save our environment.
11. Find out any 6 ecosystem services provided by a good forest ecosystem.

ZOOLOGY

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1. Immunosuppressant cyclosporine is produced from
2. Gametes of threatened species can be preserved in viable condition by a process called
3. Rivet popper hypothesis proposed by

II Answer any Three of the following – 2 Marks each 6

4. Name the major causes of Biodiversity loss. (Evil quartet)
5. Bacteria and Cyanobacteria can fix atmospheric Nitrogen to the soil.
Name a nitrogen fixing Bacteria and Cyanobacteria.
6. List out two slogans about the importance of biodiversity conservation.
7. What is BOD ? How it related with purity of water.
8. Tropical regions show greatest degree of biodiversity. Why ?

III Answer any Two of the following – 3 Marks each 6

9. Arrange the following by giving suitable titles.
(Zoological Park, National Park, Botanical Garden, Biosphere Reserve)
10. Microbes can be used to decrease the use of chemical fertilizers and pesticides. Explain with examples.
11. Elucidate three levels of Biodiversity with examples each.