

Duration: 3hr 15

Min Max. Marks: 70

- **General Instructions:**
- **This Question paper consists of four parts A, B, C, D.**
- **Part – A consists of I and II and Part D consists of two parts, section –V and – VI**
- **All the parts are compulsory**
- **Draw diagrams wherever necessary. Unlabeled diagrams do not carry any marks**

PART – A

I. Select the correct alternative from the choices given below.

1x15=15

1. Intineis made up of
a) Sporopollenin b) Pecto-cellulose c) Silica and cellulose d) Only cellulose
2. Perisperm is the remains of
a) Archegonium b) Integuments c) Endosperm d)Nucellus
3. Epicotyl, in monocots, has a few leaf primordial enclosed within
a) Coleorhizae b) Coleoptiles c) Scutellum d)Hypophysis
4. Sertoli cells are found in
a) Seminal vesicles b) Ovary c) Graffian follicle d) Seminiferous tubule
5. Fertilization in human females occurs in
a)Infundibulum b) Ampullary region
c) Isthamic region d) Ampullary- isthamic junction
6. Which of the following sexually transmitted infection cannot be cured?
a)Genital herpes b) Gonorrhoea c)Trichomoniasis d)Genital warts
7. Transfer of zygote or early embryo with upto 8 blastomeres is called
a) GIFT b) ZIFT c) IVF d) ICSI
8. Palaeontological evidences of evolution refer to the
a) Development of embryo b) Homologous organs
c) Analogous organs d) Fossils
9. According to Hugo de Vries, single step large mutation is called
a)Genetic drift b)Gene flow c) Founder's effect d) Saltation
10. LAB improves the nutritional quality of curd by increasing
a)Vitamin B12 b) Vitamin B6 c) Vitamin A d)Vitamin D
11. The fungal cells can be lysed by using _____ enzyme.
a)Lysosyme b) Cellulose c) Chitinase d) Lipase
12. Monarch butterfly is avoided by the predators because
a)It is cryptically coloured b) It is highly distasteful
c) It produces a poisonous cardiac glycoside d) It has stinging cells on its body
13. What percentage of PAR is captured by plants?
a)1% b) 20-30% c)2-10% d) 50%
14. Population density increases as
a)Natality and emigration increases b) Mortality and emigration increases
c)Natality and immigration decreases d) Natality and immigration increases
15. In which approach do we protect and conserve the whole ecosystem to protect the endangered species?
a)Ex –situ conservation b)Off- site conservation
c)No conservation d) In-situ conservation

II. Choose the correct and fill in the blanks

1 x 5 = 5

(Widal test, micro- injection, oxytosin,transcription,blood group)

16. The hormone that helps in parturition is _____
17. Multiple alleles control the inheritance of _____
18. Typhoid fever can be confirmed by _____
19. A suitable method to introduce alien DNA into animal cell is _____
20. The process of copying genetic information from one strand of DNA into RNA is termed as _____

PART – B

III. Answer any FIVE of the following

2 X 5 = 10

21. What are STD's? Mention two principles to prevent STD's.
22. What is placenta? Mention any four functions of it.
23. Codon AUG has dual function, Justify.
24. Differentiate between homologous and analogous organs.
25. Draw a neat labelled diagram of an antibody molecule.
26. Mention any four symptoms of allergy.
27. Mention the functional components of the ecosystem.
28. What is BOD? Mention its significance.

PART – C

IV. Answer any FIVE of the following.

3 X 5 = 15

29. Mention the six characters of insect pollinated flowers.
30. Draw a neat labelled diagram of monocot embryo.
31. RNA polymerase in eukaryotes show division of labour. Sustainiate.
32. Explain industrial melanism with an example.
33. Write the schematic structure of transcription unit.
34. What is Downstream processing? Mention the various steps of downstream processing.
35. Why tropical regions have greater biodiversity than temperate region?
36. Represent Pyramid of Number in Grassland ecosystem.

PART –D

Section -I

V. Answer any FOUR of the following.

5 X 4 = 20

37. With a neat labelled diagram describe the structure of Anatroous ovule.
38. With a neat labelled diagram describe the structure of Female reproductive system.
39. Explain the inheritance of two genes in pea plant with suitable example.
40. Explain the regulation of Lac operon in absence and presence of Lactose as an inducer.

41. What is innate immunity? Describe with examples the types of defense barriers of innate immunity.
42. Explain the role of microbes in household food products.
43. Explain the steps of rDNA technology.
44. Mention one example for each type of interaction
a) Mutualism b) Competition c) Parasitism d) Commensalism e) Predation.

Section -II

VI. Answer any ONE of the following.

5 x 1 = 5

45. Explain incomplete dominance with reference to flower colour in snapdragon.
46. Explain any five salient features of Human Genome.
47. a) Distinguish between benign tumour and malignant tumour.
b) Mention the pathogen, mode of transmission and symptoms of Typhoid.

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