

4. Which one of the following is used as green manure ?
- | | |
|----------------|----------------|
| a) Sesbania | b) Azotobacter |
| c) Pseudomonas | d) Rhizobium. |
5. In *Ricinus communis*, the stamens are
- | | |
|-----------------|-------------------|
| a) monadelphous | b) diadelphous |
| c) dimorphic | d) polyadelphous. |
6. Which one of the following organisms is a single cell protein ?
- | | |
|--------------|-----------------|
| a) Gossypium | b) Ricinus |
| c) Allium | d) Pseudomonas. |
7. Lacunate collenchyma is seen in
- | | |
|---------------|---------------|
| a) Helianthus | b) Datura |
| c) Ipomea | d) Nicotiana. |
8. Fishing nets are manufactured from the fibres of
- | | |
|-------------------|----------------------|
| a) Aloe vera | b) Allium cepa |
| c) Phormium tenax | d) Lillium Candidum. |
9. Complete oxidation of one molecule of glucose yields
- | | |
|-----------|-----------|
| a) 38 ATP | b) 36 ATP |
| c) 35 ATP | d) 2 ATP. |
10. The natural system of classification was published by
- | | |
|-----------------------|------------------------|
| a) Engler and Prantl | b) Bauhin and Linnaeus |
| c) Bentham and Hooker | d) Camp and Gily. |
11. The innermost layer of the cortex is
- | | |
|---------------|----------------|
| a) endodermis | b) rhizodermis |
| c) epidermis | d) pericycle. |

SECTION - C

Note : i) Answer any *four* questions including Question No. 25 which is compulsory.

ii) Draw diagrams wherever necessary.

iii) Each question carries *five* marks.

4 × 5 = 20

25. Discuss the outline of Bentham and Hooker's classification of plants.
26. How is DNA cut ?
27. Give an account of mutagenic agents.
28. Describe the structure of chloroplast.
29. Draw C₄ cycle without explanation.
30. Draw and label the parts of a transverse section of a dicot leaf.
31. Write any five aims of plant breeding.

SECTION - D

Note : i) Answer any *two* questions.

ii) Draw diagrams wherever necessary.

iii) Each question carries *ten* marks.

2 × 10 = 20

32. Describe *Ricinus communis* in botanical terms.
33. Write an essay on Xylem tissues.
34. Explain the basic techniques of plant tissue culture.
35. What is glycolysis ? Explain the steps involved in it.

PART - II (ZOOLOGY)

(Marks : 75)

SECTION - A*Note : i) Answer all questions.*

ii) Choose and write the correct answer.

iii) Each question carries *one* mark.

16 × 1 = 16

1. The pathogenic form of *Entamoeba histolytica* is
 - a) encysted spores
 - b) vegetative trophozoite
 - c) merozoite
 - d) schizont.
2. The germ theory of diseases was established by
 - a) Louis Pasteur
 - b) Robert Koch
 - c) Lister
 - d) Alexander Flemming.
3. Which one of the following is antiviral ?
 - a) Lysozyme
 - b) Interferon
 - c) Protein
 - d) Hormone.
4. Name the human disease due to autosomal dominant gene.
 - a) Sickle cell anaemia
 - b) Thalassemia
 - c) SCID
 - d) Huntington's chorea.
5. The term 'Superbugs' refers to
 - a) arthropods
 - b) insects
 - c) beetles
 - d) genetically engineered bacteria.
6. The most abundant Greenhouse gas is
 - a) NO₂
 - b) CO₂
 - c) O₃
 - d) SO₂.

7. The hazardous bio-medical wastes are disposed of by means of
- a) bio-remediation
 - b) deep well injection
 - c) surface impoundments
 - d) incineration.
8. The milk of which of the following cows is characterised by high carotene content ?
- a) Sindhi
 - b) Haryana
 - c) Gir
 - d) Jersey.
9. The blood cell count is made by using
- a) Glucometer
 - b) Sphygmomanometer
 - c) Haemoglobinometer
 - d) Haemocytometer.
10. Murrels belong to the order
- a) Channiformes
 - b) Perciformes
 - c) Siluriformes
 - d) Salmoniformes.
11. The German scientist who segregated germplasm from somatoplasm for the first time was
- a) Lamarck
 - b) Malthus
 - c) Weismann
 - d) Hugo de Vries.
12. Deficiency of Vitamin D causes
- a) Nyctalopia
 - b) Xerophthalmia
 - c) Osteomalacia
 - d) Pellagra.
13. Partial albinism causes
- a) leucoderma
 - b) vitiligo
 - c) melanoma
 - d) dermatitis.

SECTION - C

Note : i) Answer any *three* questions including Question No. 31 which is compulsory.

ii) Each question carries *five* marks. 3 × 5 = 15

29. Explain the different types of bone fracture.
30. Enumerate the adaptations of pathogenic microbes.
31. What are the symptoms of graft rejection ?
32. Give the symbolic representation of pedigree chart.
33. What are the objections to Darwinism ?

SECTION - D

Note : i) Answer any *two* questions.

ii) Each question carries *ten* marks. 2 × 10 = 20

34. Describe the mechanism of breathing with proper illustration.
 35. Explain the physiological effects of insulin and glucagon.
 36. Give an account on poverty.
 37. Explain the stages involved in the rearing of poultry.
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