

OBJECTIVE

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero marks in that question.

QUESTION NO. 1

DGK-2-24

- 1 Commonly used restriction enzyme is
(A) PBR 322 (B) PSC 101 (C) Plasmid (D) ECoR1
- 2 Eukaryotes are thought to have first appeared about
(A) 3.5 Billions (B) 1.5 Billions (C) 2.5 Billions (D) 4.5 Billions
- 3 The change in frequency of allele at locus that occur by chance is
(A) Gene pool (B) Genome (C) Migration (D) Genetic drift
- 4 Pick the biotic component from the following
(A) Animals (B) Soil (C) Water (D) Atmosphere
- 5 Stone monuments are being eroded due to stone cancer by
(A) Green House effect (B) Ozone depletion (C) Acid rain (D) Global warming
- 6 Incidence of uric acid kidney stone is
(A) 5 % (B) 10 % (C) 15 % (D) 70 %
- 7 Which is stimulus for thigmotropism
(A) Touch (B) Light (C) Water (D) Chemical
- 8 Clavicle connects scapula with
(A) Skull (B) Femur (C) Tibia (D) Sternum
- 9 Hormone which promotes bolting of some roset plants is known as
(A) Ethene (B) Auxin (C) Cytokinin (D) Gibberellin
- 10 The 2nd largest part of brain is
(A) Thallamus (B) Hypothalamus (C) Cerebellum (D) Cerebrum
- 11 In honey bee , males are haploid and produce sperms by
(A) Mitosis (B) Meiosis (C) Binary fission (D) Multiple fission
- 12 Cleavage results in the formation of rounded closely packed mass blastomeres
(A) Gastrula (B) Blastula (C) Morulla (D) Neurula
- 13 How many different kinds of t.RNA in human cell
(A) 54 (B) 45 (C) 25 (D) 20
- 14 The sequence of nucleotide that determine the amino acid sequence of a protein is
(A) Gene (B) Allele (C) Multiple allele (D) Chromosome
- 15 Full cell cycle in yeast cell has length
(A) 30 minutes (B) 60 minutes (C) 90 minutes (D) 120 minutes
- 16 A pure breeding tall pea plant was crossed to short plant. What will be the frequency of short plants in F1
(A) 0.25 (B) 0 (C) 0.5 (D) 1
- 17 Antibody made by soyabean can be used as treatment for
(A) Genital Herpes (B) AIDS (C) Hepatitis (D) Herpes simplex

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| i | Describe some adaptations made by plants living in extreme dry conditions |
| ii | How kidney helps to conserve water when body is facing dehydration ? |
| iii | What are heterotherms ? Give two examples |
| iv | Why ecdysis is necessary for most insects ? |
| v | Describe the role of Ca^{+2} and ATP in muscle contraction |
| vi | How snakes move from one place to another without legs ? |
| vii | Compare parthenocarpy with apomixes |
| viii | What is oestrous cycle ? Is it also present in humans ? |
| ix | What do you mean by " Taiga " ? Give its conditions |
| x | What are the main factors that determine productivity of an ecosystem ? |
| xi | How global warming may effect human life on earth ? |
| xii | Differentiate between renewable and non-renewable resources |

QUESTION NO. 3 Write short answers any Eight (8) of the following

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| i | How are synthetic auxins applied in agriculture ? |
| ii | How does sodium potassium pump work in transmission of nerve impulse ? |
| iii | Why insight learning is considered highest form of learning ? |
| iv | What do you know about nullogamete ? |
| v | Why AB blood group is known as universal recipient ? |
| vi | A man is 45 years old and bald. His wife also has pattern baldness. What is the risk that their son will lose his hair ? |
| vii | How do we obtain gene of interest ? |
| viii | What is gene pharming ? |
| ix | What do you know about Taq polymerase ? |
| x | Define commensalism. Give example |
| xi | What do you know about Autecology ? |
| xii | Define Food Chain. Give an example |

QUESTION NO. 4 Write short answers any Six (6) of the following

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| i | Narrate the characteristics of dividing cells in plants |
| ii | Give the effects of temperature on growth of plants |
| iii | Draw a structure showing phosphodiester linkage |
| iv | A human chromosome has a bulk of information. How ? |
| v | How euchromatin and heterochromatin are different ? |
| vi | What is the role of Actin and myosin in cell division ? |
| vii | Write the characteristics of cancer cells |
| viii | Give the contribution of Lamarck in evolution |
| ix | Define gene pool and fixed allele |

SECTION-II

Note: Attempt any Three questions from this section

8 x 3 = 24

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| Q.5.(A) | Describe the major homeostatic functions of the liver |
| (B) | Define mitosis. Write its importance |
| Q.6.(A) | Describe vertebral column and rib cage |
| (B) | Explain Nitrogen cycle with the help of sketch |
| Q.7.(A) | Write a note on structure and function of fore brain |
| (B) | The fossil record and comparative embryology are strong evidence of evolution. Justify |
| Q.8.(A) | What is incomplete dominance ? Explain with the example of 4 O'clock plant |
| (B) | Elaborate various components of female reproductive system |
| Q.9.(A) | What is regeneration ? Why it is more common in some animals and not in others ? |
| (B) | What is gene therapy ? Discuss its importance with two examples |