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STD: XII

BIOLOGY SET -2

MARKS-70

## BIO-BOTANY

MARKS-35

## I. CHOOSE THE CORRECT ANSWER :

8X1=8

- In which techniques Ethidium Bromide is used?
  - Southern Blotting techniques
  - Western Blotting techniques
  - Polymerase Chain Reaction
  - Agrose Gel Electroporosis
- EcoRI cleaves DNA at
  - AGGGTT
  - GTATATC
  - GAATTC
  - TATAGC
- Genetic engineering is
  - making artificial genes.
  - hybridization of DNA of one organism to that of the others.
  - production of alcohol by using micro organisms.
  - making artificial limbs, diagnostic instruments such as ECG, EEG etc.,
- An antibiotic gene in a vector usually helps in the selection of
  - Competent cells
  - Transformed cells
  - Recombinant cells
  - None of the above
- Virus free plants are developed from
  - Organ culture
  - Meristem culture
  - Protoplast culture
  - Cell suspension culture
- The prevention of large scale loss of biological integrity
  - Biopatent
  - Bioethics
  - Biosafety
  - Biofuel
- Micro propagation involves
  - vegetative multiplication of plants by using micro-organisms.
  - vegetative multiplication of plants by using small explants.
  - vegetative multiplication of plants by using microspores.
  - Non-vegetative multiplication of plants by using microspores and megaspores.
- Select the incorrect statement from given statement
  - A tonic used for cardiac arrest is obtained from Digitalis purpuria
  - Medicine used to treat Rheumatic pain is extracted from Capsicum annum
  - An anti malarial drug is isolated from Cinchona officinalis.
  - Anti-carcinogenic property is not seen in Catharanthus roseus.

## II. ANSWER ANY FOUR OF THE FOLLOWING :

4X2=8

- What are the materials used to grow microorganism like Spirulina?
- Name the chemicals used in gene transfer.
- What is bioremediation?
- How will you avoid the growing of microbes in nutrient medium during culture process? What are the techniques used to remove the microbes?
- What is secondary metabolites. Give any two example.
- Differentiate between Somaclonal variations and Gametoclonal variations

## III. ANSWER ANY THREE OF THE FOLLOWING :

3X3=9

- What do you know about the word pBR332?
- Write the advantages of herbicide tolerant crops.
- Give an account on Cryopreservation.
- Write the various steps involved in cell suspension culture.
- Write about the Advantages of Artificial seeds.

## IV. ANSWER ALL THE QUESTIONS :

2X5=10

- Mention the application of Biotechnology.

OR

b. Compare the various types of Blotting techniques.

21. a. Explain the basic concepts involved in plant tissue culture.

**OR**

b. What do you mean Embryoids? Write its application.

**BIO-ZOOLOGY**

**MARKS-35**

**8X1=8**

**I. CHOOSE THE CORRECT ANSWER :**

1. ABO blood group in man is controlled by  
a) Multiple alleles      b) Lethal genes      c) Sex linked genes      d) Y-linked genes
2. Father of a child is colourblind and mother is carrier for colourblindness, the probability of the child being colourblind is  
a. 25%      b) 50%      c) 100%      d) 75%
3. A marriage between a colourblind man and a normal woman produces  
a. All carrier daughters and normal sons      b. 50% carrier daughters, 50% normal daughters  
c. 50% colourblind sons, 50% normal sons      d. All carrier offsprings
4. A mRNA molecule is produced by  
a) Replication      b) Transcription      c) Duplication      d) Translation
5. The first codon to be deciphered was \_\_\_\_\_ which codes for \_\_\_\_\_.  
(a) AAA, proline      (b) GGG, alanine      (c) UUU, Phenylalanine      (d) TTT, arginine
6. Meselson and Stahl's experiment proved  
(a) Transduction      (b) Transformation      (c) DNA is the genetic material  
(d) Semi-conservative nature of DNA replication
7. Which period was called "Age of fishes"?  
a) Permian      b) Triassic      c) Devonian      d) Ordovician
8. The Neanderthal man had the brain capacity of  
a) 650 – 800cc      b) 1200cc      c) 900cc      d) 1400cc

**II. ANSWER ANY FOUR OF THE FOLLOWING :**

**4X2=8**

9. What is haplodiploidy?
10. Mention the symptoms of Phenylketonuria
11. Name the anticodon required to recognize the following codons: AAU, CGA, UAU, and GCA.
12. Differentiate - Leading strand and lagging strand
13. Differentiate between divergent evolution and convergent evolution with one example for each.
14. Mention the main objections to Darwinism.

**III. ANSWER ANY THREE OF THE FOLLOWING :**

**3X3=9**

15. What is Lyonisation?
16. Why the human genome project is called a mega project?
17. State any three goals of the human genome project.
18. Differentiate between the eating habit and brain size of *Australopithecus* and *Ramapithecus*.
19. Mention any three similarities found common in Neanderthal man and *Homo sapiens*.

**IV. ANSWER ALL THE QUESTIONS :**

**2X5=10**

20. a. Explain the genetic basis of ABO blood grouping man. **OR**  
a. What are the applications of Karyotyping?  
b. How is sex determined in human beings?
21. a. It is established that RNA is the first genetic material. Justify giving reasons. **OR**  
b. How does Hardy-Weinberg's expression ( $p^2 + 2pq + q^2 = 1$ ) explain that genetic equilibrium is maintained in a population? List any four factors that can disturb the genetic equilibrium.