

M.Sc. BIOTECHNOLOGY
SECOND SEMESTER
GENOMICS AND PROTEOMICS
MBT-203

**SET
A**

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 1hr. 30 mins.

Full Marks: 35

(Objective)

Time: 15 mins.

Marks: 10

Choose the correct answer from the following:

1×10=10

- The commonly used vectors for human genome sequencing are:
 - T-DNA
 - BAC and YAC
 - Expression vectors
 - T/A cloning vectors
- How many DNA duplexes are obtained from one DNA duplex after 4 cycles of PCR?
 - 16
 - 8
 - 128
 - 256
- Fraternal twins are produced when:
 - Two ova are fertilized simultaneously
 - Single fertilized ovum divides into two
 - Single ovum fertilized by two sperms
 - Two ova develop parthenogenetically
- DNA fingerprinting is same for:
 - Cousins
 - Identical twins
 - Fraternal twins
 - None of the above
- Beckwith-Wiedemann syndrome are associated with abnormalities of imprinted genes on the..... arm of chromosome.....
 - Long arm of Chromosome 11
 - Short arm of Chromosome 11
 - Long arm of Chromosome 10
 - Short arm of Chromosome 10
- A heritability close to zero indicates:
 - Very little influence from genetic differences
 - Almost all of the variability comes from genetic differences
 - Almost all of the variability comes from environmental factors
 - Both a and b
- To which of the following statements can the role of heredity and environment be linked?
 - Role of environment is static while heredity changes
 - Behavioral theories and related to heredity
 - Comparative effects of heredity and environment differ in many areas of human development
 - None of the above
- Which of the following is predominantly heredity related factor?
 - Participation in social activities
 - Color of the eyes
 - Thinking pattern
 - Attitude towards peer group

9. The DNA segment to be cloned is called:
- a. Gene segment
 - b. DNA fragment
 - c. DNA insert
 - d. All of these
10. Northern hybridization is used to identify a specific:
- a. Protein
 - b. RNA
 - c. DNA
 - d. Both b and c

(Descriptive)

Time : 1 hr. 15 mins.

Marks : 25

[Answer question no.1 & any two (2) from the rest]

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|--|--------|
| 1. Explain mitochondrial inheritance. | 5 |
| 2. What is Lyon's hypothesis? Explain Barr bodies with an example. | 10 |
| 3. Explain in detail the steps of PCR. | 5+5=10 |
| 4. Write short notes on:
a) Isodisomy
b) Multiple allele traits | 5+5=10 |
| 5. What is the Human Genome Project explanation? State the differences between prokaryotic and eukaryotic genomes. | 5+5=10 |

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