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GAE-431 Seat No._____

B. Sc. (Sem. III) Examination

November/December – 2015

Paper - CC-I-4 : Biotechnology

(Genetics & Analytical Techniques)

Time : 3 Hours] [Total Marks : 70

1 MCQ and very short questions 15

1. Work of Mendel was on _____ organism.
   (A) Pisum sativum
   (B) E.Coli.
   (C) Drosophila Melenogaster
   (D) None of these
2. If in Drosophila X chromosome specific dominate gene M controls black eye color over m gene that controls white eye color. What will be possible results of F1 progeny if black eye color male is crossed with black eye female which is heterozygous dominant?
   (A) All female with white eye phenotype.
   (B) All male with black eye phenotype.
   (C) Black and white eye male in proportion to 1:1
   (D) Black and white eye female in proportion to 1:1

3. If a H and W are sharing incomplete dominance over each other and when pure line HH (Red flower) is crossed with ww(white flower) plant than what would be proportion of red flower plants in F2 generation upon self fertilization of F1 progenies?

(A) 25%

(B) 75%

(C) 50%

(D) 100%

4. Which one of these is not example of partition chromatography?

(A) Paper

(B) TLC

(C) Ion exchange

(D) None of these

5. Any change in basic sequence of DNA is known as?

(A) Mutation

(B) Gene

(C) Genome

(D) Nucleotide

6. Sexual reproducing diploid organism, homologous pair of chromosome is derived from?

(A) Both from same parent

(B) Each from different parent

(C) Changes with organism to organism.

(D) Independent of parent

7. Allele is

(A) Gene

(B) Protein.

(C) Carbohydrate

(D) Lipid

8. Lambda max value of molecule

(A) Gives qualitative detail of molecule but cannot be used for identification of molecule.

(B) Reflects quantitative information of molecule.

(C) Gives qualitative information of molecule and can be used for identification of molecule.

(D) All of these.

9. EM radiation used in NMR spectroscopy is

(A) Radio frequency

(B) Nuclear

(C) Microwave

(D) Visible light

10. Which part of spectrophotometer is used to convert multiwavelength EM radiation in to specific wavelength before passing through sample cell ?

(A) Monochrome tar

(B) Light source

(C) Cuvette.

(D) (A) and (B) both.

11. _____ is father of genetics.

12. Full form of Rf value in paper chromatography is _____

13 Full form of HPLC is _____

14. What is scientific name of garden pea?

15. What is wavelength range of Ultra Violet radiation?

2 Give the answer the question in short (Any five) (15)

1. Principle of partition chromatography
2. Beer's and Lamberts' law.
3. List out types of linkage.
4. Write down application of NMR
5. Explain monohybrid cross.
6. Applications of paper chromatography.
7. Use of monochrome tars in UV visible spectroscopy.

3 Write short notes on any four of the following. (20)

1. Sex linkage in Drosophila.
2. Explain multiple alleles.
3. EM radiation
4. Incomplete dominance.
5. Dihybrid cross
6. Principle of ion exchange chromatography.

4 Write detailed note on any two of the followings. (20)

1. HPLC
2. Mendel's contribution to Genetics.
3. UV- Visible spectroscopy.
4. Gas Chromatography.
