



GAS-3165

Seat No. _____

B. Sc. (Sem. III) Examination

November/December - 2013

Biotechnology : (CORE) Paper - IV

(Genetics & Analytical Techniques)

Time : Hours]

[Total Marks : 70

1 Answer the following : (any fourteen) 14

(1) Which law of Mendel is known as 'law of segregation'.

- (A) First law
- (B) Second law
- (C) Third law

(2) Alleles are _____

- (A) Proteins
- (B) Genes
- (C) Carbohydrates
- (D) Lipids

(3) Any change in the base sequence of DNA is known as _____

- (A) Genes
- (B) Genomes
- (C) Mutation
- (D) Starvation

(4) Which is a type of nitrogen base ?

- (A) Glycine
- (B) Guanine
- (C) Glymine

- (5) How many pairs of chromosomes are observed in human cells ?
- (A) 21
 - (B) 22
 - (C) 23
 - (D) 24
- (6) Which type of paper is used in paper chromatography ?
- (A) Tissue paper
 - (B) Craft paper
 - (C) Filter paper
 - (D) News paper
- (7) "Column" is used in which chromatography ?
- (A) Paper chromatography
 - (B) Thin layer chromatography
 - (C) Gas chromatography
- (8) What is the full form of HPLC ?
- (9) Cuvette used in colorimeter is made up of which material ?
- (10) Which are the types of planar chromatography ?
- (11) Give examples of carrier gas used in GC.
- (12) What is the meaning of polyploidy ?
- (13) What is the full form of DNA ?
- (14) Which nitrogen base is seen in RNA but not in DNA ?
- (15) What is the function of a Monochromator in Spectroscopy ?
- (16) Name the types of linkages.

- 2 Answer the following ; (any **eight**) 16
- (1) What is Aneuploidy ?
 - (2) Define Allele.
 - (3) Give the two example of chemical mutagenic agents.
 - (4) What is the range of wave length of ultra violet light region ?
 - (5) Name the different type of spectroscopy methods.
 - (6) Give two applications is NMR.
 - (7) Write principle of partition chromatography.
 - (8) Give the names of gel used in gel chromatography.
 - (9) Explain the term - Crossing over.
 - (10) Name the two types of atomic spectroscopy.
- 3 Answer the following : (any **four**) 20
- (1) Give an overview on electromagnetic spectrum.
 - (2) Write a note on multiple allele.
 - (3) Discuss complete and incomplete dominance.
 - (4) Discuss basics of IR spectroscopy.
 - (5) Write a note on paper chromatography.
 - (6) Discuss TLC.
- 4 Answer the following : (Any **two**) 20
- (1) Discuss principle, instrumentation, working and applications of UV-Vis spectrophotometer.
 - (2) Write a note on HPLC.
 - (3) Give an overview on types of chromosomal mutations.
 - (4) Discuss laws of mendel with suitable examples.