



KN-5884 Seat No. _____

B.Sc. (Sem. III) Examination

November / December - 2014

Biotechnology : Paper : CC-I-4
(Genetics and Analytical Techniques)

Time : 3 Hours]

[Total Marks : 70

1. MCQ. 10

1. Which of the following is a physical mutagen ?
(a) Mustard gas (b) X-ray
(c) Nitrous acid (d) none of these
2. _____ is aneuploidy.
(a) $2n$ (b) $3n$
(c) $4n$ (d) none of these
3. _____ is father of genetics.
(a) Morgan (b) Mendel
(c) Batson (d) none of these
4. Pink colour flower of snapdragon is the example of _____ dominance.
(a) Incomplete (b) Complete
(c) Co (d) none of these
5. When centromere is involved in inversion part it is called.
(a) Paracentric (b) Pericentric
(c) Physical (d) none of these

6. The wavelength range of UV region is.
(a) 200-400 nm (b) 350-750 nm
(c) 3500- 7500 nm (d) none of these.
7. The electromagnetic radiation used in the NMR spectroscopy.
(a) Nucleus (b) Radiofrequency
(c) Visible light (d) Microwave
8. Molecular vibration transition is the phenomenon used in.
(a) IR spectroscopy (b) X-ray Diffraction
(c) NMR (d) Atomic spectroscopy
9. In which of the chromatographic techniques the separation is on the basis of charge.
(a) Ion exchange (b) Affinity
(c) Gel exclusion (d) Paper
10. The detector in UV-Visible which works on the principle of photoelectric effect.
(a) PMT (b) Photodiode
(c) Electron capture (d) none of these

2. Answer in short the following (Any Five).

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1. What is epistasis? Give one example.
2. What is translocation? Name the types of translocations.
3. What is mutation and mutagen?
4. What is R_F in chromatography?
5. Give examples of carriers of gases used in GC.
6. Give the principle of atomic absorption spectroscopy
7. What is crossing over? Write the stages of crossing over.

3. Write short notes on the following (Any Five). **30**
1. Inversion
 2. Types of linkage
 3. Multiple allele
 4. Detectors of GC
 5. Principle of X-ray diffraction
 6. Inborn Metabolic errors
 7. Electromagnetic radiation
4. Write in detail notes of the following (Any Two). **20**
1. Laws of Mendel
 2. Principle of IR and its applications
 3. HPLC
 4. Numerical chromosomal variations.
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