

P. S. SCIENCE & H. D. PATEL ARTS COLLEGE, KADI

Internal Examination

B. Sc. Semester - III

[Mark : 40

23-9-2016]

Biotechnology : CC-BT-302

[2 Hours

Genetics and Analytical Techniques

Q.1. Answer all questions. Each question carries 1 mark. 10

- (1) Working of Photon Detector is based on the principle of _____.
(A) Photoelectric effect (B) Thermo electric effect
(C) Thermodynamics (D) None
- (2) Define electromagnetic spectrum and enlist its regions according to increasing Wavelength.
- (3) Write down application of X-Ray diffraction spectroscopy.
- (4) Define Alleles.
- (5) If a pea plant shows a recessive phenotype,
(A) it can be either TT or Tt (B) it can be either Tt or tt
(C) it can be only TT. (D) it can be only tt.
- (6) Why Mendel Selected the pea plant ?
- (7) Which of the following is NOT a trait that is the result of, or is affected by, the interaction of more than one gene ?
(A) human skin color (B) cleft palate
(C) height (D) sickle cell anemia (E) human eye color
- (8) Give the contribution of Landsteiner.
- (9) The radiation used in NMR that bringing resonance is _____.
(A) UV-visible (B) Infrared (C) Radio waves (D) Gamma
- (10) Amount of air contaminants i.e. Green house gases can be determined using spectroscopy.
(A) U.V-Visible (B) IR (C) Atomic absorption (D) NMR

Q.2. Answer any four questions. Each question carries 5 marks. 20

- (1) Describe Beers & Lamberts law & write down its limitations.
- (2) Draw a labeled block diagram of atomic absorption spectrometer & explain working of it.
- (3) Describe basic theory of IR Spectroscopy
- (4) What is genetic interaction ? Explain in detail lethal gene.
- (5) Write short note on mutagenic agent.
- (6) Write Mendel's laws of heredity. Describe any one in detail.

Q.3. Answer any one question. The question carries 10 marks. 10

- (1) Define linkage. Describe in detail linkage.
- (2) Explain Paper chromatography in detail.