

(A)
(25)**SARDAR PATEL UNIVERSITY****M. Sc. (Integrated Biotechnology) – Seventh Semester Examination (CBCS)****Thursday, 20th October, 2016****2:00 p.m. to 5:00 p.m.****PS07CIGMB2: Molecular Diagnostic Techniques****Total Marks: 70**

- Note: (1) Figures to the right indicate marks.
(2) Draw a neat and labeled diagram, wherever necessary.

Q. 1 Choose the most appropriate answer from the four alternatives given: [08]

- i. In molecular diagnostic laboratory (MDL) documentation must be authorized by _____ before use.
(a) GLP (b) GMP (c) QA (d) QC
- ii. Which of the following statements are not true with respect to MDL?
(1) Shado reports are must (2) Uni-directional work flow is must
(3) Sample retention is mandatory (4) Major contaminants are nucleic acid
(a) 1 and 2 (b) 3 and 4 (c) 1 and 3 (d) 1 and 4
- iii. If mutation 6_7dupTC occurs in the reference sequence ATGCGTCACTTA, the products will be _____.
(a) ATGCGTCTTA (b) ATGCGTCACTTA
(c) ATGCGTCTCACTTA (d) ATGCGACTTA
- iv. Which one of the following method is most suitable for SNP detection?
(a) Inversion probe assay (b) DGGE (c) Melt curve analysis (d) SSCP
- v. HPV causes _____.
(a) AIDS (b) Cervical cancer (c) Gonorrhoea (d) Herpes
- vi. Which of one the following is a mucopolysaccharidosis?
(a) Hunter syndrome (b) Pompe disease
(c) Gaucher disease (d) Febry's disease
- vii. Sexually transmitted disease, gonorrhoca is caused by _____.
(a) *Neisseria meningitidis* (b) *N. gonorrhoeae*
(c) Spirochaete (d) All of these
- viii. Early detection of neonatal IEM is crucial for _____.
(a) avoiding irreversible damages, as the condition is rapidly progressive
(b) early and effective treatment
(c) early diagnosis which helps in genetic counselling
(d) All of these

PTO

Q.2 Answer any SEVEN from the following: [14]

- i. Briefly explain the reference materials.
- ii. What is proficiency testing?
- iii. Briefly explain factors influencing test menu.
- iv. Give basic principle of ASO.
- v. Explain PNA beacons in brief.
- vi. Write different diagnostics tests/techniques for diabetes.
- vii. Differentiate between type I and type II diabetes
- viii. Write examples of triple repeat disorders involving exon, intron and UTR region.
- ix. Differentiate between HSV - 1 and HSV - 2.

Q.3(a) Write a detailed note on quality assurance program in MDL. [6]

(b) Discuss good manufacturing practices involved in MDL. [6]

OR

(b) Narrate the steps required for epidemiological study of outbreak. [6]

Q.4(a) Enlist hybridization based mutation detection technique. Explain SSCP in detail. [6]

(b) Explain inversion probe assay in detail. [6]

OR

(b) Explain RFLP and BESS methods. [6]

Q.5(a) Justify that "Tuberculosis is a multisystem infection". [6]

(b) Discuss diagnostics for HCV. [6]

OR

(b) Give detail account of cervical cancer. [6]

Q.6(a) Write a detail note on cystic fibrosis. [6]

(b) Write short notes on the following:

- 1) Pompe disease 2) Gaucher disease [3+3]

OR

(b) Justify that "Cancer is an epigenetic disorder". [6]
