



MAN-003-038602 Seat No. _____

**B. Voc. (Medical Laboratory & Molecular
Diagnostic Technology) (Sem. VI) (CBCS)**

Examination

March/April – 2018

MLMDT-6.2 : Molecular Diagnostics

Faculty Code : 003

Subject Code : 038602

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- Instructions :** (1) All questions are compulsory.
(2) The paper is divided in two sections.
(3) Figures on right indicate marks.

SECTION-I

- 1 Answer the following questions : **20**
- (1) Name the methods to study mutation.
 - (2) Give examples of target amplification technique.
 - (3) What is hybrid capture assay ?
 - (4) Write the principle of VNTR.
 - (5) Write name of one x-linked recessive disorder.
 - (6) Full form of H and N in HINI is _____.
 - (7) What do you mean by viral load ?
 - (8) CFTR gene is present on chromosome no _____ ?
 - (9) Which molecular diagnosis method is frequently used for detection of *Neisseria gonorrhoeae* ?
 - (10) Write one example of pathogenic E. coli

- (11) Which enzyme affected in Hunter disease ?
- (12) Which enzyme becomes defective in Phenylketonuria ?
- (13) Write one advantage of RT-PCR based molecular diagnosis ?
- (14) What is Thalassaemia ?
- (15) Which disease is associated with β -amyloid protein ?
- (16) What is Polygenetic disorder ?
- (17) Enlist the various site of sampling for the diagnosis of bacterial diseases.
- (18) Which technique is used for paternity test ?
- (19) Write the nature of HPV genome?
- (20) Nonisotopic RNase cleavage assay (NIRCA) is used for _____.

SECTION - II

- 2** (a) Answer in brief (Any **three**) **3×2=6**
- (1) Define antigenic shift and antigenic drift.
 - (2) What is the disadvantage of molecular diagnosis?
 - (3) Describe a gene sequencing method that can be used to identify SNPs in whole human genome.
 - (4) Enlist the gel-based genotyping methods.
 - (5) Enlist the steps involve in SSP-PCR method.
 - (6) Gold standard test for HSV infection.
- (b) Answer in brief (Any **three**) **3×3=9**
- (1) Write the role of molecular diagnostics in Blood banking.
 - (2) Note on transcription based amplification method.
 - (3) High density oligonucleotide arrays.
 - (4) Haemagglutination Inhibition for the diagnosis of Influenza virus.
 - (5) Write the principle of FISH technique.
 - (6) Write about diagnosis of Gonorrhoeal disease.

(c) Answer in brief : (Any **two**) **2×5=10**

- (1) Discuss on different variants of PCR
- (2) Discuss RFLP.
- (3) Write a note on Single strand conformational polymorphism
- (4) Gold standard test for the diagnosis of HIV infection.
- (5) Write any three basic techniques for molecular diagnosis.

3 (a) Answer in brief (Any **three**) **3×2=6**

- (1) Enlist the emerging rapid methods for diagnosis of Tuberculosis.
- (2) Write name of two important glycogen storage disease and defective enzyme associated with it.
- (3) What is Tay-Sachs disease ?
- (4) What is Mucopolysaccharidoses ?
- (5) Write about beta thalassaemia.
- (6) Discuss risk factors associated with meningitis.

(b) Answer in brief (Any **three**) **3×3=9**

- (1) Write major difference between Type-1 and Type-2 Diabetes.
- (2) What is role of lysosome in cell ? Write one example of lysosomal storage disease and its defective enzyme.
- (3) Write a short note on Hurler syndrome.
- (4) Write diagnosis method of individual with cystic fibrosis disorder.
- (5) Sickle cell anemia.
- (6) Principle of Indirect Fluorescent Antibody test for the diagnosis of malaria.

(c) Answer in brief (Any **three**)

2×5=10

- (1) Pulsed-Field Gel Electrophoresis for the diagnosis of E. coli infection
 - (2) Describe any method for viral load determination and monitoring.
 - (3) Write a note on Diabetes as a Genetic Disease.
 - (4) Parkinson's disease.
 - (5) Write name of various hepatitis strain. Discuss any two molecular diagnosis methods for detection of hepatitis virus.
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