

Seat No. : _____

MK-102

March-2019

B.Sc., Sem.-III

202 : Biotechnology (Methods in Biotechnology)

Time : 2:30 Hours]

[Max. Marks : 70

1. (A) Write Stoke's law on sedimentation. Discuss principle and applications of centrifugation. 14

OR

- (1) Write note on principle and applications of Electrophoresis. 7
(2) Explain Beer-Lambert laws and principle of Spectroscopy technique. 7

- (B) Answer any **four** in brief : 4

- (1) Define RCF.
(2) What is Fluorescence?
(3) What is porosity (μM) of bacteria-proof filter ?
(4) Write formula for Partition Coefficient.
(5) Give full form for EDGC.
(6) What is basis of separation in Molecular Exclusion chromatography ?

2. (A) Discuss principle and applications of ELISA technique. 14

OR

- (1) Explain gel diffusion technique with diagram. 7
(2) Write a note on bioassay of antibiotics. 7

- (B) Answer any **four** in brief : 4

- (1) What is use of Reporter gene ?
(2) What is use of Radioactive tracer technique ?
(3) Why nutritional mutant are used for bioassay of growth factors ?
(4) What is Scintillation ?
(5) Which technique shows precipitation arc ?
(6) What is measured by Geiger Muller counter ?

3. (A) Explain working of thermal cycler and describe typical PCR cycles. **14**
- OR**
- (1) List types of blotting techniques and explain Southern blotting in detail. **7**
- (2) Explain principle and uses of Microarray technique. **7**
- (B) Answer any **three** in brief : **3**
- (1) Why base composition affects T_m value of ds DNA ?
- (2) Which molecules are analysed by Western blot technique ?
- (3) How many PCR amplicons normally made after 4 cycles started with 2 pair of primer molecules ?
- (4) Name membranes types used in blotting technique.
- (5) How RT PCR differs from normal PCR ?
4. (A) Describe various methods used for cultivation of animal virus. **14**
- OR**
- (1) Write a note on various Cytopathic effects seen as a mark of viral growth. **7**
- (2) Explain desirable traits of industrial cultures and methods to screen them from nature. **7**
- (B) Answer any **three** in brief . **3**
- (1) What is Cryopreservation ?
- (2) Name two characteristics of industrial strains that are attempted for improvement ?
- (3) What is PFU ?
- (4) What is use of latex particles in virus enumeration by electron microscopy ?
- (5) Name the method used for cultivation of plant virus.
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