

M-63/2110
MOLECULAR GENETICS -II
SEMESTER- I, (Dec. 2019)

TIME ALLOWED 3 Hrs

MM 75

Note: Candidates are required to attempt two questions each from Sections A and B and the entire Section C.

Section A

- Q.No.1. Discuss the process of DNA replication in prokaryotes by giving role of various proteins involved in this process. 15
- Q.No.2. (a) What is polymerase chain reaction Discuss the various steps involved in PCR. Enumerate some variants of PCR. 10+5=15
- (b) Explain briefly the Southern blotting.
- Q.No.3. (a) Discuss co-translational and post-translational modifications of proteins. 10+5=15
- (b) Write a note on inhibitors of translation.
- Q.No.4. (a) Define operon. Discuss the Ara operon in detail. 10+5=15
- (b) Write a note on gene silencing.

Section B

- Q.No.5(a). Discuss the mitochondrial genome along with its significance. 10+5=15
- (b) Explain briefly the bacteriophage.
- Q.No.6. Enlist various methods of DNA sequencing. Discuss chain termination method. 15
- Q.No.7. (a) What is MALDI-TOF? Discuss this technique along with its applications. 8+7=15
- (b) What is flow-cytometry? Discuss along with its applications.
- Q.No.8. (a) Discuss the applications of proteomics in Biotechnology. 10+5=15
- (b) Write a note on chromosomal walking.

Section C

Q.No.9. Explain briefly the following:

- | | | |
|-----------------------|--------------|-----------|
| (a) Topoisomerases | (b) Splicing | |
| (c) RFLP | (d) Histones | |
| (e) Northern blotting | (f) RAPD | |
| (g) Ribotypes | (h) Cosmids | |
| (i) Pharmacokinetics | (j) Introns | 1.5x10=15 |