

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)  
BSc DEGREE EXAMINATION DECEMBER 2019  
(Third Semester)

Branch - BIOCHEMISTRY

MOLECULAR BIOLOGY

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks!)

Answer ALL questions

ALL questions carry EQUAL marks (10 x 1 = 10)

- 1 Identify the repeating sequence of nucleotides in telomeres  
(i) TTGGCA (ii) TTAGGG  
(iii) GGGATT (iv) TTGAGG
- 2 Find the enzyme responsible for unwinding of DNA strand during replication.  
(i) SSB (ii) DNA Pol I  
(iii) Ligase (iv) Helicase
- 3 What is other name for TATA box?  
(i) Hogness box (ii) CAAT box  
(iii) both (i) & (ii) (iv) none of the above
- 4 What does RNA pol II synthesize,  
(i) tRNA (ii) mRNA  
(iii) SnRNA (iv) All of the above
- 5 Identify the termination codon.  
(i) UAA (ii) AUG  
(iii) UUU (iv) CUG
- 6 Choose the inhibitor of translation  
(i) Tetracycline (ii) Streptomycin  
(iii) Erhyromycin (iv) All
- 7 Mention the structural genes of Lac Operon.  
(i) I (ii) P  
(iii) O (iv) Z, Y, A
- 8 Name the physical agent responsible for DNA damage.  
(i) Nitrous acid (ii) UV Rays  
(iii) Virus (iv) None of the above
- 9 What are transposons otherwise known as  
(i) jumping genes (ii) regulatory genes  
(iii) house keeping genes (iv) all of the above
- 10 Define LIRS  
(i) long inter spread nuclear element (ii) long terminal repeats  
(iii) long nucleae elements (iv) retroposons

SECTION - B (35 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 x 7 = 35)

- 11 a Outline the role of various enzymes involved in prokaryotic replication.

OR

12 a Summarize the termination of prokaryotic transcription.

OR

b Explain the role of eukaryotic RNA polymerases.

13 a Explain the various types of inhibitors of translation.

OR

b Summarize briefly post translational modifications.

14 a Out line SOS repair mechanism.

OR

b Explain how DNA is damaged by chemical agents.

15 a Describe transposable elements in prokaryotes.

OR

b Summarize on gene mutation.

**SECTION -C (30 Marks)**

Answer any **THREE** questions

**ALL** questions carry **EQUAL** Marks (3 x 10 = 30)

16 Enumerate replication in eukaryotes.

17 Discuss in detail on mRNA processing.

18 Elaborate on prokaryotic translation.

19 Explain Lac operon in detail.

20 Elucidate holiday model of homogeneous recombination.

**Z-Z-Z**

END