PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2022
(Third Semester)

Branch – **BIOCHEMISTRY**

MOLECULAR BIOLOGY

Time: Three Hours Maximum: 50 Marks

SECTION-A (5 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (5 x 1 = 5)

1 Which of the following is true about DNA polymerase?
i) It can synthesize DNA in the 5' to 3' direction
ii) It can synthesize DNA in the 3' to 5' direction
iii) It can synthesize mRNA in the 3' to 5' direction
iv) It can synthesize mRNA in the 5' to 3' direction

2 Name the site where upstream sequences are located?
i) Prior to start point
ii) After the start point
iii) Right border of DNA
iv) In the middle of DNA

3 The process of synthesis of a polypeptide chain from mRNA is known as____
i) Conversion
ii) Replication
iii) Transcription
iv) Translation

4 Lac operon is an example for _____oper.
i) Repressive
ii) Inducible
iii) adoptive
iv) Feed back

5 Name the term given to the type of mutation which depends on the conditions of the environment?
i) Forward mutation
ii) Reverse mutation
iii) Conditional lethal mutation
iv) Gain of function mutation

SECTION - B (15 Marks)
Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 x 3 = 15)

6. a. Bring out the Griffiths transformation experiment.
OR
b. Describe the rolling circle mode of replication.

Cont...

7. a. Explain the structural features of E.Coli RNA polymerase.

OR

b. Narrate the functions of Transcription factors.

8. a. Outline the composition of prokaryotic ribosomes.

OR

b. State the termination of prokaryotic protein synthesis

9. a. Summarize the spontaneous damage of DNA.

OR

b. Describe the excision repair mechanism of DNA.

10. a. Bring out the features of neutral mutation.

OR

b. Narrate the insertion of sequence elements.

SECTION -C (30 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 x 6 = 30)

11. a. Discuss the Elongation stage of prokaryotic DNA replication.

OR

b. Highlight the termination of eukaryotic DNA replication.

12. a. Outline the eukaryotic mRNA processing.

OR

b. Point out the mechanism of synthesis of RNA in prokaryotes.

13. a. Trace the inhibitors of translation.

OR

b. Summarize the initiation of prokaryotic protein synthesis.

14. a. Discuss the Trp operon regulation.

OR

b Highlight the alkylation of DNA damage.

15. a. Point out the transposable elements in prokaryotes.

OR

b Elucidate the silent and frame shift mutations.

Z-Z-Z

END