

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2022  
(Sixth Semester)

Branch – BIOCHEMISTRY

**CELL-A MOLECULAR APPROACH**

Time: Three Hours

Maximum: 75 Marks

**SECTION-A (10 Marks)**

Answer ALL questions

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

1. Cdk2/cyclin E functions in
  - (i) G2/M transition
  - (ii) G2
  - (iii) M
  - (iv) G1/Stransion
2. What is Ubiquitin?
  - (i) Protein Kinase
  - (ii) Protease
  - (iii) component of ETC
  - (iv) tagsanother protein for proteolysis
3. Which of the following is the characteristic of a cancer cell?
  - (i) Density dependent inhibition
  - (ii) Contact inhibition
  - (iii) Loss of anchorage dependence
  - (iv) Apoptosis
4. Example of proto-oncogenes?
  - (i) All
  - (ii) Src
  - (iii) Myc
  - (iv) Abl
5. \_\_\_\_\_ approach of tissue engineering facilitates the self-repair of tissues.
  - (i) Substitutive
  - (ii) Histoconductive
  - (iii) Histoconductive
  - (iv) Analytical
6. In the plasticity, haematopoietic stem cells develop into \_\_\_\_\_.
  - (i) Neuron
  - (ii) Heart muscle
  - (iii) Insulin
  - (iv) Hirudin
7. Who discovered PCR?
  - (i) Kary Mullis
  - (ii) Mendal
  - (iii) Robert Davson
  - (iv) Curie
8. \_\_\_\_\_ used to identify cellular networks that are deregulated in disease.
  - (i) Bioinformatics
  - (ii) Genomics
  - (iii) Computational biology
  - (iv) Proteomics
9. Expand STS.
  - (i) Sequence-Tagged Site
  - (ii) Shorttandom sequence
  - (iii) Expressed sequence tags
  - (iv) Sequence tool suite
10. 10. Which of the following are used in gene cloning?
  - (i) Lomasomes
  - (ii) Mesosomes
  - (iii) Plasmids
  - (iv) nucleoids

**SECTION - B (35 Marks)**

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 7 = 35)

- 11 a Analyze check points of cell cycle of human in compare with yeast cell.  
OR
- b List out the events that occur during a signal transduction pathway.

Cont...

- 12 a Explain the process of oncogenesis.  
OR  
b Bring out the role of tumor suppressor gene and p53 in cancer.
- 13 a Brief on the applications of Tissue engineering with examples.  
OR  
b State totipotent, pluripotent and multipotent. Why stem cells are called so?
- 14 a Sketch the procedure and applications of DNA microarray.  
OR  
b Narrate the application of bioinformatics used in proteomics?
- 15 a What is physical mapping of DNA fragments? Explain.  
OR  
b Enumerate history and purpose of HGP in society.

**SECTION - C (30 Marks)**

Answer any **THREE** Questions

**ALL** Questions Carry **EQUAL** Marks (3 x 10 = 30)

- 16 Describe Cell division of haploid cell production with neat diagram.
- 17 Narrate management and potentialities of primary cancer culture.
- 18 Explain bone tissue engineering.
- 19 Develop the role of PCR in diagnosis of infectious disease.
- 20 Enumerate the map based cloning of a Gene involved in hereditary disease.

Z-Z-Z

END