

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2018
(Third Semester)

Branch - **BIOCHEMISTRY**

MOLECULAR BIOTECHNOLOGY

Time: Three Hours

Maximum: 75 Marks

SECTION -A (30 Marks)

Answer **ALL** questions

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

- 1 a Explain the technique of homopolymer tailing.
OR
b What are restriction enzymes and how do they work? Give examples.
- 2 a Explain how HRT and HART can identify the translation product of a cloned gene.
OR
b What are the different types of *in vitro* mutagenesis techniques?
- 3 a Give an account on gene knockout technology.
OR
b Comment on C- DNA synthesis and C-DNA libraries.
- 4 a Write about biolistic particle delivery system.
OR
b Explain herbicide tolerance technology.
- 5 a What are the unique properties of stem cells? Write the similarities and differences between embryonic and adult stem cells.
OR
b What is known about adult cell differentiation?

SECTION -B (45 Marks)

Answer any **THREE** questions

ALL questions carry **EQUAL** Marks (3 x 15 = 45)

- 6 Write about M13 filamentous phage, YAC and SV40 as a cloning vector.
- 7 Elaborate the principle and technique of DNA microarray. Add a note on its applications.
- 8 Discuss the approaches used for the introduction of DNA into animal cells.
- 9 Discuss in detail about vector mediated gene transfer method.
- 10 Discuss somatic gene therapy in detail.