

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2018
(First Semester)

Branch - **BIOCHEMISTRY**

ANALYTICAL BIOCHEMISTRY

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer **ALL** questions

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

- 1 Who received Nobel prize for pioneering work on protein electrophoresis?
(i) Wilson (ii) Arne Tiselivs
(iii) Slater (iv) Walker
- 2 Choose the linear polysaccharide isolated from sea weeds.
(i) Polyacrylamide (ii) TEMED
(iii) agarose (iv) anhydrogalactose
- 3 The formula used to find the angular velocity of rotor is
(i) $G = w^2r$ (ii) $G = wr$
(iii) $G = wr^2$ (iv) $G * - r$
- 4 Name the component used for banding of DNA during density gradient centrifugation.
(i) Sodium bromide (ii) Caesium chloride
(iii) Sodium iodide (iv) Dextron
- 5 Indicate the temperature of the column that is raised to facilitate analyze voltalisation.
(i) 10-20°C (ii) 5 - 10°C
(iii) 25 -35°C (iv) 50-300°C
- 6 Identify the detector of mass spectrometer.
(i) diffusion pump (ii) electron impact
(iii) rotary vane pump (iv) conversion dynode
- 7 Which is the underlying concept of PCR technique?
(i) Reverse transcription (ii) Transformation
(iii) Thermocycling (iv) Adsorption
- 8 Find the recognition site for ECORI.
(i) GATC (ii) GAATTC
(iii) GATTC (iv) GATCC
- 9 What is also called as protein blotting?
(i) Southern blotting (ii) Nitroblotting
(iii) Northern blotting (iv) Western blotting
- 10 Choose the enzyme that is essential for PCR.
(i) Taq polymerase (ii) Hexokinase
(iii) Hexose isomerase (iv) Mutase

SECTION - B (35 Marks)Answer **ALL** Questions**ALL** Questions Carry **EQUAL** Marks (5 x 7 = 35)

- 11 a Prepare the agarose gel for pulse field gel electrophoresis.
OR
b Show the analysis of protein mixtures through two dimensional gel electrophoresis.
- 12 a Illustrate the basic concepts of radiochemical methods.
OR
b Discuss the methodology of a spectrophotometer.
- 13 a Solve the cell separation technique by flow cytometry.
OR
b State the phenomenon of circular dichorism spectroscopy.
- 14 a Sketch the variants in PCR technique.
OR
b Explain the Northern blotting technique.
- 15 a Apply foot printing technique to identify DNA-Protein interactions.
OR
b Assess test is used for mutagenicity testing - Justify.

SECTION - C (30 Marks)Answer any **THREE** Questions**ALL** Questions Carry **EQUAL** Marks (3 x 10 = 30)

- 16 Analyse the principle, instrumentation and applications of an auto analyzer.
- 17 Compare the methodology of different centrifugation techniques.
- 18 Interpret the principle, components, limitations and applications of HPLC.
- 19 Compare the methodology of Southern blotting and Northern blotting technique.
- 20 Elucidate the technique and applications of DNA finger printing technique.

Z-Z-Z

END