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2 SEM TDC BIOTCH G 1

2017

(May)

BIOTECHNOLOGY

(General)

Course : 201

(Biophysics and Analytical Techniques)

Full Marks : 48

Pass Marks : 19/14

Time : 2 hours

*The figures in the margin indicate full marks
for the questions*

1. Choose the correct option from the following : 1×5=5

- (a) Thin layer chromatography is
- (i) partition chromatography
 - (ii) electrical mobility of ionic species
 - (iii) adsorption chromatography
 - (iv) None of the above

(Turn Over)

(2)

(b) Porphyrin ring in chlorophyll molecules have in center an atom of

(i) magnesium

(ii) iron

(iii) hydrogen

(iv) nickel

(c) Chromatography with solid stationary phase is called

(i) circle chromatography

(ii) square chromatography

(iii) solid chromatography

(iv) adsorption chromatography

(d) What is Ethidium Bromide?

(i) Buffer

(ii) Dye

(iii) DNA solution

(iv) Restriction enzyme

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(3)

(e) In an SDS-PAGE

(i) proteins are denatured by the SDS

(ii) proteins have the same charge-to-mass ratio.

(iii) smaller proteins migrate more rapidly through the gel

(iv) All of the above

2. Write briefly about the following : $3+3+4=10$

(a) Retardation factor

(b) First law of thermodynamics

(c) Beer-Lambert law

3. What is photophosphorylation? Explain cyclic and non-cyclic photophosphorylation with suitable diagrams. $2+9=11$

Or

Explain the events in photosynthesis. 11

4. Explain the principles of UV-spectroscopy. Explain how protein can be quantified spectrophotometrically. $3+8=11$

Or

Explain the principle and instrumentations of agarose gel electrophoresis. Describe the role of tracking dye and gel loading solutions mentioning their composition. $3+8=11$

(Turn Over)

(Continued)

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(4)

5. Write short notes on any *two* of the following : 5½×2=11

- (a) Principle and practice of gel filtration chromatography
- (b) Kranz anatomy and significance
- (c) Principle and practice of NMR
- (d) X-ray crystallography

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