Sub:- Bio-physics.

Q.P. Code:

2 ½ Hours

SYBSC SEM III (CBS) BT

Total Marks: 75

1. Attempt **all** questions.
2. **All questions** carry **equal** marks.
3. Draw **neat labeled diagrams** wherever necessary.
4. Use of **log tables** and **non-programmable calculator** is **allowed**.
5. For **Q 2, Q 3 and Q 4** attempt A and B **OR** C and D.

Q 1 **Do as directed (Any fifteen)** 15

1. Define "Frequency of Electromagnetic Radiation".
2. Explain 'Dispersion of light'
3. Define "Refraction"
4. List two example of florescent molecules used in cell staining.
5. State Lamberts' Law
6. What is 'population inversion'?
7. _____ part of the electromagnetic spectrum is sensed by the human eye.
8. Explain the term : Radiation
9. Define the term : Wave motion
10. The maximum displacement of a wave particle from its mean position of rest is called its _____.
11. The SI unit of magnetic field is _____.
12. What is antiferromagmetism?
13. Explain the term : Viscosity.
14. Constant voltage is maintained by _____ in the apparatus assesmbly.
15. Rounded contours of molecule elicit _____ retardation friction.
16. Electrodes in paper electrophoresis are made up of _____.
17. Define - electrophoresis
18. Define – discontinuous gel electrophoresis
19. Give one example of type of paper electrophoresis.
20. State a function of TEMED.

Q. 2 A	Give detailed account on LASER	08
Q. 2 B	Write a detailed note on 'Spectrophotometers'	07
	OR	
Q. 2 C	Give an account on florescent microscopy.	08
Q. 2 D	Explain sample preparation for Electron Microscopy.	07
Q. 3 A	Explain the use of thermistor as a temperature sensing device	08
Q. 3 B	Explain the science behind the flow of liquid through capillaries	07
	OR	
Q. 3 C	Elaborate on the concept of paramagnetism	08
Q. 3 D	Elaborate on the concept of surface energy	07
Q. 4 A	Illustratively describe horizontal paper electrophoresis.	08
Q. 4 B	Describe various matrices used in gel electrophoresis.	07
	OR	
Q. 4 C	Describe the factors affecting electrophoretic mobility.	08
Q. 4 D	Explain in detail about 2-D gel electrophoresis.	07
Q. 5	Write Short notes on **any three** of the following	15
a.	Monochromators	
b.	Doppler effect.	
c.	Biomagnetism.	
d.	Migration of an ion in an electric field	
e.	Properties of carrier ampholytes	