



DRR-3220
Third Year B. Sc. (Sem. VI) Examination
March / April - 2016
Physics : Generic Elective
(Bio-Physics)
(New Course)

Time : Hours]

[Total Marks : 50

Instructions :

(1)

<p>नीचे दृशावेक निशानीवाणी विगतो उत्तरवही पर अवश्य कभवी. Fillup strictly the details of signs on your answer book.</p> <p>Name of the Examination : THIRD YEAR B. Sc. (SEM. 6)</p> <p>Name of the Subject : PHYSICS : GENERIC ELECTIVE - (BIO-PHYSICS) (NEW)</p> <p>Subject Code No. : 3 2 2 0 Section No. (1, 2,.....) : NIL</p>	<p>Seat No. : [][][][][][][]</p> <p>Student's Signature</p>
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- (2) Draw neat diagrams wherever necessary.
- (3) Symbols used in the paper have their usual meaning.
- (4) Figures to the right indicate full marks of the question.
- (5) Scientific non - programmable calculator may be used.

1 Answer the following questions in brief : 8

- (1) On what factors does resolving power of a microscope depend?
- (2) What is dark field microscopy?
- (3) What do you mean by magnifying power of a lens? On what factors does it depend?
- (4) What are the main advantages of an oil immersion lens?
- (5) State the working principle of an electron microscope.
- (6) How are Airy discs formed?
- (7) Why is a scanning tunneling electron microscope not proper in the study of biological samples?
- (8) Define fluorescence and phosphorescence.

- 2** (a) Discuss the construction and working of a phase contrast microscope. **10**

OR

- (a) Discuss in detail the construction and working of an interference microscope. **10**

- (b) Explain working of a centrifuge microscopes. **4**

OR

- (b) Explain illumination in microscopes. **4**

- 3** (a) Discuss in detail the interaction of electromagnetic radiation with matter. **10**

OR

- (a) Discuss in detail the theory of infrared spectroscopy. **10**

- (b) Discuss the application of IR spectroscopy. **4**

OR

- (b) Explain the main advantages of an atomic force microscope. **4**

- 4** Write short note on any two of the following in detail : **14**

- (a) Construction and working of X-ray microscope.

- (b) Ion probe analysis.

- (c) Photoluminescence spectroscopy.

- (d) Disadvantages of Raman Spectroscopy over Infrared spectroscopy.
