14CHU11 / 14BCV15 / 14BCU15

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2017
(Fourth Semester)

Common to Branches - CHEMISTRY & BIOCHEMISTRY

PHYSICS - II

Time : Three Hours Maximum : 75 Marks

SECTION-A (20 Marks!
Answer ALL questions
ALL questions carry EQUAL marks " (1 0 x 2 = 20)

1 Write any two laws of photoelectric effect.

2 What is Compton effect?

3 What is meant by population inversion?

4 What is Stake's and Anti-stoke's lines?

5 What is NMR spectroscopy? Mention any two important practical application of NMR? *

6 What is meant by ultrasonics?

7' State the De-Morgan's theorem.

8 What is the semiconductor material? Mention the different types of semiconductor.

9 Define numerical aperture.

10 What is meant by endoscope?

SECTION - B (25 Marks!
Answer ALL Questions
ALL Questions Carry EQUAL Marks (5 x 5 = 25)

11 a Explain about the Millikan's experimental verification.

OR

b Discuss diffraction of X- rays and Bragg's law.

12 a Describe the construction and working of He-Ne laser.

OR

b Discuss how Raman effect is used in the study of molecular structure of linear and triatomic molecules.

13 a Write an essay about ultraviolet spectroscopy and mention some of its applications.

OR

b Write a note on SONAR and NDT.

14 a What is zener diode? Draw V-I characteristics of a zener diode and explain.

OR

b Why NAND gate is called as universal gate?

Cont . . .

15 a Define acceptance angle. Discuss about the neat diagram of the structure of optical fibre.

OR

b Explain in detail about the fibre optic materials and classification of optical fibre.

SECTION - C (30 Marks)

Answer any THREE Questions

ALL Questions Carry EQUAL Marks (3 x 10 = 30)

16 Discuss about the production and properties of X-rays.

17 Write a note on elementary theory of Raman effect and Laser Raman spectrometer.

18 Describe the production of ultrasonic waves by piezo electric generator method and also mention the properties of ultrasonic waves.

19 Draw the circuit diagram, explain the action of transistor in common emitter mode. Also write a note on half adder circuit.

20 Describe in detail any one of the light source and detector used in fibre optic communication system. Also discuss how the optical fibre is used in communication field.

Z-Z-Z . END