PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS) .

BSc DEGREE EXAMINATION MAY 2017 . ,
(Third Semester) \4Cl\QOq] !

Common to Branches - CHEMISTRY & BIOCHEMISTRY

PHYSICS -1

Time : Three Hours Maximum : 75 Marks

SECTION-A (20 Marks)
Answer ALL questions
ALL questions carry EQUAL marks (10 x 2 = 20)

1 Define'Gravitational constant'.
2 What is meant by a beam?
3 Give the conditions for 'Brightness' and 'Darkness' of interference.
4 Define specific rotation.
5 What is called temperature of inversion?
6 What are the five main components of a flat plate collectors?
7 What is called a thermocouple?
8 Define'Curie temperature'.
9 State the postulates of special theory of relativity.
10 What is called time 'dilation'?

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

11 a State Kepler's laws of planetary motion.
OR
b Derive an expression for the period of oscillation of torsion pendulum.

12 a Determine the refractive index of a liquid by Newton Ring's method.
OR
b Describe the construction and working of Laurentz halfshade polarimeter.

13 a Explain the phenomenon of adiabatic'demagnetization.
OR
b Describe Angstrom type pyreheliometer.

14 a Explain the method of determination of thermo emf by a potentiometer.
OR
b List out the properties of paramagnetic materials.

15 a Deduce thejjalilean transformation equation.
OR
b Discuss'Length contraction'.

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

16 Describe Boy's method for measuring the gravitational constant.

17 Explain the construction of Michelson's interferometer. How it is used to determine the difference in wavelengths between two closely spaced spectral lines.

18 Describe Joule-Thomson effect and give its theory. How it has been utilized in the liquefaction of gases.

19 Give the theory of a moving coil galvanometer. Explain how would you determine the charge sensitivity of the same.

20 Describe the Michelson-Morley experiment and **also** discuss **its** necrativ* wcnltc