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W—115—2018

FACULTY OF SCIENCE

B.Sc. (Third Year) (Fifth Semester) EXAMINATION

OCTOBER/NOVEMBER, 2018

(CBCS Pattern)

PHYSICS

Paper XIII (Phy-303)

(Astrophysics)

(Wednesday, 24-10-2018) **Time : 10.00 a.m. to 12.00 noon**

Time—2 *Hours* *Maximum Marks*—40

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) *All* questions carry equal marks.

1. Attempt any *four* (each of **2** marks) : 8

   (*i*) Define Black body.

   (*ii*) Write down different layers' name of the atmosphere of sun.

   (*iii*) Write down relation between light year and parsec.

   (*iv*) State Kepler's third law of planetary motion.

   (*v*) Write the names of the terrestrial planets and Jovian planets.

   (*vi*) State flux and luminosity.

2. Attempt any *two* of the following (each of **4** marks) : 8

   (*a*) Obtain the expression for Kepler's second law of planetary motion.

   (*b*) Explain in detail Greenwich sidereal time and local sidereal time.

   (*c*) Describe the formation of the solar system.

3. Attempt any *one* of the following (each of **8** marks) : 8

   (*a*) Explain in brief the equatorial co-ordinate system.

   (*b*) Describe the structure and composition of mercury.

P.T.O.

4. Attempt any *two* of the following (each of **4** marks) : 8

   (*a*) Draw a neat labelled diagram of electromagnetic spectrum and explain in short.

   (*b*) Discuss the magnetic activity in the sun.

   (*c*) Describe temperature variations in photosphere of the sun.

5. Attempt any *one* of the following (each of **8** marks) : 8

   (*a*) Derive an expression for blackbody radiation and Wien's law.

   (*b*) Discuss the interior of the sun.