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BF—99—2016

FACULTY OF SCIENCE

B.Sc. (Sixth Semester) EXAMINATION

OCTOBER/NOVEMBER, 2016

PHYSICS

Paper XV (PHY-306)

(Solar Energy)

(Elective Paper)

(Monday, 24-10-2016)

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* : 8
 - (a) Define solar constant.
 - (b) Define direct and diffused radiation.
 - (c) Give the classification of fuel cells based upon temperature.
 - (d) What are main components of a fuel cell ?
 - (e) Explain main features of continuous plant.
 - (f) Draw the schematic diagram for a single process conventional digester.
 - (g) Write down the advantages of compound parabolic concentrator (CPC).
2. Attempt any *two* : 8
 - (a) Explain the physical principle of the conversion of solar radiation into heat.
 - (b) Describe the working of a Fresnel lens collector.
 - (c) Explain the working of a solar distillation in brief.
3. Attempt any *two* : 8
 - (a) Explain design principle and constructional details of a box-type solar cooker.
 - (b) Describe the working of mirror strip reflector.
 - (c) Discuss in brief design and principle of operation of a fuel cell.

P.T.O.

4. Attempt any *one* : 8
- (a) Discuss in detail solar radiation at the earth's surface.
 - (b) What are basic elements of a solar water heater ? Describe with a neat diagram, working of a natural circulation solar water heater.
5. Write short notes on any *two* : 8
- (a) Applications of fuel cell
 - (b) Compound parabolic concentrators
 - (c) Solar pumping
 - (d) Conversion efficiency.