

morning
Date:- 10/12/2014.

Student Exam No:- _____

GANPAT UNIVERSITY
B.TECH SEM-III (CE/IT/CIVIL/MC/EC/BM&I)
REGULAR EXAMINATION NOV-DEC-2014
20S301: ENERGY CONSERVATION AND RENEWABLE ENERGY

Time: 3 Hours

Total Marks:-70

Instructions: - 1. Attempt all questions.

2. Answers of each section must be written in separate answer book.

3. Make suitable assumptions wherever necessary.

4. Figures to the right indicate full marks.

SECTION-I

- Q:1 (A) Define Energy management. Explain elements of energy management in detail. (6)
(B) What is energy conservation? How energy can be conserved by improving design of lighting scheme. (6)

OR

- Q:1 Write short note on : (Any Four) (12)
a. Incandescent lamp
b. Electro less induction lamp
c. Electronic Ballast
d. Energy efficient motor
e. Automatic power flow controller

- Q:2 (A) Discuss parameters required for good lighting. (5)
(B) What is arc? How it can used in arc heating. Explain any one arc heating method. (6)

OR

- Q:2 (A) Which factors affect the temperature of the resistance heating? Explain each temperature control method in detail. (5)
(B) What is the principle of resistance heating? Explain Direct resistance heating as well as resistance ovens. (6)

- Q:3 Attempt any two: (12)
(A) Which materials are used in the conductors? Also explain briefly the cable substitution process.
(B) The net investment of one energy saving plant is 5,25,000 Rs. After 5 years. If the annual income is 1,25,000 Rs. Than what will be the payback period and ROI?
(C) Explain the concept of hydropower plant and explain their types with neat sketch.
(D) Explain Energy route of hydro. Also discuss merits and demerits of hydro power plant.

SECTION-II

- Q:4 (A)** Explain pyrhelimeter and pyranometer with neat sketch. (6)
- (B)** What is solar energy collector? Describe flat plate collector briefly with their types and components. (6)
- OR**
- Q:4 (A)** Define Solar Energy, Solar Constant and write the solar energy drawbacks. (6)
- (B)** What is solar cooker? Explain box type and community type solar cooker briefly with neat sketch. (6)
- Q:5 (A)** Develop an equation for Wind Power And Explain the terms (5)
- (a) Power coefficient (PC)
- (b) Energy Pattern Factor
- (B)** Write notes on (6)
- (a) Two blade windmill
- (b) single blade windmill
- (c) Multiple blade windmill
- (d) Dutch type windmill
- OR**
- Q:5 (A)** Explain aero generator giving neat sketch and briefly describe its components. (5)
- (B)** Which turbine is used in hydro power plant? And How hydroelectric power plants work. (6)
- Q:6** **Attempt any two:** (12)
- (A)** Define Biomass. Mention the different bioconversion systems giving illustrative example.
- (B)** Explain Janta biogas plant with neat sketch.
- (C)** Discuss the factors which affect the electricity generation of hydro power plant

END OF PAPER