

3010

B.Tech. 2nd Semester (Common for all Branches)

G- Scheme Examination, May-2019

BASIC OF ELECTRICAL ENGINEERING

Paper-ESC-EE-101-G

Time allowed : 3 hours]

[Maximum marks : 75

Note : Question No. 1 is compulsory. Attempt any one question from each section. All questions carry equal marks.

1. Explain the following :

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| (a) Significance of Phasor Diagram. | 2.5 |
| (b) BH Curve and its Characteristics. | 2.5 |
| (c) Torque-Speed characteristics of DC Motor. | 2.5 |
| (d) Power factor and its improvement. | 2.5 |
| (e) Voltage and Current sources. | 2.5 |
| (f) R.M.S. value. | 2.5 |

Section-A

2. (a) What do you mean by Kirchhoff's Law ? What are the different types ? Explain each with suitable example. 8
- (b) Explain the analysis of simple circuit with dc excitation in detail. 7

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- (g) Define base load and peak load.
- (h) What is load duration curve ?
- (i) Write the expression for overall annual cost of electric energy generated by power plant in two part form.
- (j) What is an economizer ?

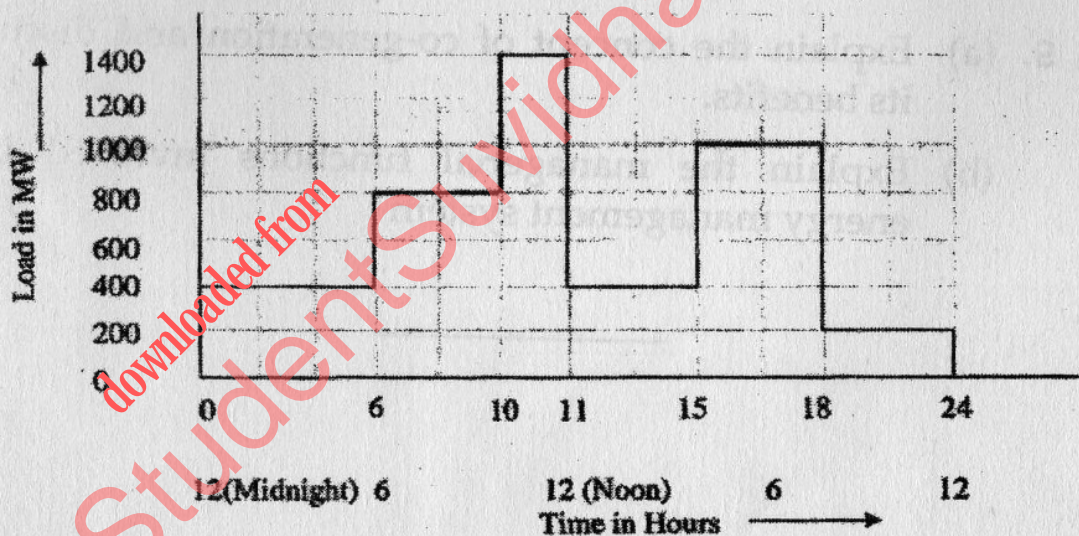
SECTION – A

- 2. Discuss recent trends of generation of electric power. Discuss and compare different sources of energy available in nature. 20
- 3. (a) What is interconnected grid system ? Explain the advantages of using such system. 10
- (b) Explain conventional and non conventional sources of electric energy. 10

SECTION – B

- 4. (a) Describe the desirable characteristics of tariff. Discuss some of important types of tariff commonly used. 10
- (b) What is economics of power generation ? How Depreciation charge can be calculated by Sinking fund method ? 10
- 5. (a) Define the following terms : 10
 - (a) Load factor
 - (b) Diversity factor
 - (c) Plant capacity factor

- (d) Plant use factor
 (e) Demand factor
- (b) The daily load curve of a power station is shown in figure. Study the figure and answer the following questions : 10
- (a) What is the maximum demand on the power station ?
 (b) Calculate units generated per day.
 (c) Find average load.
 (d) What is the load factor ?



SECTION - C

6. (a) Draw schematic diagram for geo thermal generating system. Also mention the barriers associated with geothermal power generation. 10
- (b) With the help of block diagram, explain the working of wind energy conversion system. 10