Total No. of printed pages = 4

CAI-502/GT&DOP/5th Sem/2017/M

GENERATION, TRANSMISSION AND DISTRIBUTION OF POWER

Full Marks – 70

Pass Marks – 28

Time – Three hours

The figures in the margin indicate full marks for the questions.

Answer any *five* questions.

1. (a) "Hydroelectric power stations are the cleanest power generating stations with lowest running cost." Why ? 5

   (b) Explain briefly, how electric power is generated in hydroelectric power stations. 4

   (c) Describe about at least three important points which should be taken into account while selecting the site of a hydro plant. 3

   (d) What are the different types of reaction turbines ? 2

[Turn over

2. (a) "Coal is the main fuel for thermal power plant." Write briefly. How electrical energy is generated by the combustion of coal in a thermal power plant. 3

(b) Write about some important advantages and disadvantages of thermal power plant. 5

(c) Briefly discuss the following : 2×3=6

(i) Cooling arrangement

(ii) Economiser

(iii) Boiler.

3. (a) Discuss about some important points for site selection of Nuclear power plant. 6

(b) Write a few lines about each of the following : 2×4=8

(i) Chain reaction

(ii) Nuclear fusion and fission reaction

(iii) Radioactivity

(iv) Control rods.

4. (a) Compare the volume of conductor material required for single phase two wire AC system with DC two wire system with one conductor earthed. 7

(b) Mention four properties of conductor material used in overhead transmission lines. 4

(c) What is the full form of ACSR ? 1

(d) Write the name of two insulators used in overhead transmission lines. 2

5. (a) In power generating stations, why generated voltage is stepped up for transmission ? With the help of a neat diagram, discuss how electric power is transmitted and distributed at the consumer's end. 2+9=11

(b) Write three advantages of AC transmission. 3

6. (a) What do you mean by distribution system ? With the help of a neat diagram, discuss the primary and secondary AC distribution system. 8

(b) Write briefly about the classification of overhead transmission lines. 6

7. Write short notes on any *two* : $7 \times 2 = 14$

(a) Short transmission lines.

(b) Water hammer effect in hydroelectric power plant.

(c) Overhead versus underground distribution systems.