TED (10)–1004

(REVISION—2010)

Reg.No.....

Signature.....

FIRST SEMESTER DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY OCTOBER, 2010

GENERAL ENGINEERING

[*Time :* 3 hours

(Maximum marks : 100)

PART—A

(Answer the questions in one or two sentences. Each question carries 2 marks)

Marks

I (a) List different grades of cement.

(b) Name the engine in which a spark plug is used.

(c) Name any two electrical supply sources.

(d) Define E-waste.

(e) Name two semi conductor materials used for colour LEDs. (5×2=10)

PART—B

(Answer any *five* questions. Each question carries 6 marks)

II (a) Sketch any four types of built-up steel sections.

(b) What is the function of a clutch in an automobile ?

(c) Two resistances of 60 ohms and 30 ohms are connected in parallel with a series resistance of 20 ohms across a 200 V DC supply. Calculate the current flowing and voltage across each resistor.

(d) We require a 5 V DC supply for a radio receiver. We are provided with the mains AC supply voltage of 230 V, 50 Hz. Sketch the circuit diagram for generating 5 V DC supply.

(e) Explain the precautions required on handling electronic circuits.

(f) List three types of inductive and resistive load of a domestic consumer.

(g) Write notes on water hammer. (5×6=30)

PART—C

(Answer *four* full questions. Each question carries 15 marks)

III (a) Describe the instruments used in chain survey. 10

(b) Draw the elevation of a brick wall in Flemish bond with 4 layers. 5

OR

Marks

IV The following observations are taken in a levelling work :

0.255, 0.457, 0.760, 1.750, 1.985, 2.530, 0.980, 0.845, 0.680 and 2.535. The position of the instrument was changed after the third and eighth readings. Draw out a page of level field book and enter the readings properly. The first reading was taken on a Bench Mark (BM) of Reduced Level (RL) 105.750 m. Calculate the RL of all the points by Height-of Collimation method. 15

V With the help of sketch explain the working of steam power plant. 15

OR

VI With the help of sketch explain the working of nuclear power plant. 15

VII (a) Prepare the monthly bill at the rate of Rs. 2 per unit for the month of April of a domestic consumer with following loads :

10 No. of 18 W CFL lamps working for 8 hrs. per day.

5 No. of 40 W fan working for 8 hrs. per day.

1 No. of 500 W motor working for 2 hrs. per day. 10

(b) Explain the significance of power factor in AC circuits. 5

OR

VIII (a) A coil having a resistance of 10 ohms and an inductive reactance of 10 ohms are connected in series across a 230 V, 50 Hz supply. Calculate the current, power and power factor. 10

(b) What is the necessity of a lightning arrester of installation ? 5

IX (a) Draw and explain the block diagram of switched mode power supply. 10

(b) Compare 2 G and 3 G mobile services. 5

OR

X (a) Explain the application of limit switches in machinery. 7

(b) Explain the working of an infrared proximity switch. 8

(4×15=60)