

FIRST SEMESTER DIPLOMA EXAMINATION IN ENGINEERING/
TECHNOLOGY—MARCH, 2011

GENERAL ENGINEERING
(Common—Except DCP and CABM)

[Time : 3 hours

(Maximum marks : 100)

PART—A

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

Marks

- I (a) Name the cement used for construction under water.
 (b) What is the use of gear box in a four wheel vehicle ?
 (c) Define impedance of an A.C. circuit.
 (d) Write an equation for finding the equivalent resistance of a parallel circuit containing 'n' numbers of resistances.
 (e) State the purpose of proximity switch in an electronic circuit.

(5x2=10)

PART—B

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

- II (a) Write the essential requirements of a good foundation.
 (b) Classify power plants on the basis of fuel used and nature of load.
 (c) Compute the power dissipated and current drawn from the source by a circuit containing 3 resistors connected as follows :
 (i) 30 Ω and 70 Ω resistances are connected in parallel.
 (ii) This parallel combination is connected in series with a resistance of 29 Ω .
 The circuit is fed by a DC supply of 200 V.
 (d) Draw the block diagram of a switch mode power supply.
 (e) List the uses of steel in building works.
 (f) State the uses of : (i) Clutch (ii) Rear axle in a four wheel vehicle.
 (g) Write short notes on :
 (i) Earth Leakage Circuit Breaker (ELCB)
 (ii) Earthing.

(5x6=30)

PART—C

(Answer one full question from each unit. Each question carries 15 marks)

UNIT—I

- III (a) Explain the different steps associated with the preparation of concrete. 10
 (b) Outline the main characteristics of a good brick. 5

OR

- IV (a) Write the advantages of ready-mix concrete over site-mix concrete. 10
 (b) List the instruments used in chain surveying. 5

UNIT—II

- V Explain the working of four stroke petrol engine with the help of figures. 15

OR

- VI (a) Explain the working of a steam power plant with line diagram. 10
 (b) Compare petrol engine and diesel engine on any of its five features. 5

UNIT—III

- VII. (a) An AC series circuit consists a resistance of 20Ω and an inductive reactance of 31.4 ohm . If it is supplied by a voltage of 240V at 50 Hz .
 Calculate : (i) Impedance (iii) Power factor 10
 (ii) Current (iv) Power of the circuit. 5
 (b) List the major electric supply sources.

OR

- VIII (a) In a residential building following loads are connected :
 (i) 10 lamps of 60 watt each working 8 hrs per day.
 (ii) 4 lamps of 40 watt each working 6 hrs per day.
 (iii) 1 kW motor working 2 hrs per day.
 (iv) 2000 W heater is working 1 hr per day.
 If the cost per kWh is Rs. 2.5, calculate the total cost of energy consumption for a month which has 30 days. 10
 (b) Write the reasons behind the generation of electrical energy in the form of alternating current is more popular. 5

UNIT—IV

- IX (a) Draw the circuit diagram of a 5V power supply system with the specifications of components used. 10
 (b) List the key elements of CDMA. 5

OR

- X (a) Define 'e' waste and suggest suitable methods for handling 'e' waste. 10
 (b) List the applications of LED. 5