

FIRST SEMESTER DIPLOMA EXAMINATION IN ENGINEERING/  
TECHNOLOGY — MARCH, 2015

**GENERAL ENGINEERING**  
(Common except DCP and CABM)

[Time : 3 hours

(Maximum marks : 100)

Marks

## PART—A

(Maximum marks : 10)

I Answer the following questions in one or two sentences. Each question carries 2 marks.

1. List the different types of sand.
2. What is meant by a four stroke engine ?
3. Name different electrical circuits.
4. What is a micro controller ?
5. What is CDMA ?

(5x2=10)

## PART—B

(Maximum marks : 30)

II Answer *any five* of the following questions. Each question carries 6 marks.

1. Explain characteristics of good bricks.
2. Name 6 constituents of cement and their properties.
3. List any 6 classification of IC engine.
4. Briefly describe the functions of following components of IC engine :  
(a) crankshaft                      (b) piston                      (c) Camshaft
5. Write short note on :  
(a) Inductance                      (b) Capacitance
6. Briefly describe :  
(a) Fuel cells                      (b) Solar cell
7. Explain about switch mode power supply with the help of a block diagram.

(5x6=30)

## PART—C

(Maximum marks : 60)

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

## UNIT – I

- III (a) Explain the different type bricks. 8  
 (b) Write the essential requirements of a good foundation. 7

OR

- IV (a) Describe about any 4 instruments used in chain survey. 8  
 (b) Explain the different steps associated with the preparation of concrete. 7

## UNIT – II

- V (a) With the help of a sketch explain the working of hydro electric power plant. 8  
 (b) Compare petrol engine and diesel engine by listing 7 points. 7

OR

- VI (a) Explain the working of four stroke diesel engine with the help of necessary sketches. 8  
 (b) With the help of a diagram explain the working of steam power plant. 7

## UNIT – III

- VII (a) Explain the system of distribution of electrical energy from the supply mains to the consumers with circuit diagram. 7

- (b) An AC series circuit consist of a resistance of 18 ohms and an inductive reactance of 28.4 ohms. If it is supplied by a voltage of 240V and 50Hz.

Calculate :

- (i) Impedance (iii) Power factor  
 (ii) Current (iv) Power of the circuit 8

OR

- VIII (a) Write short note on :  
 (i) Phase difference (ii) RMS value 7

- (b) An AC series circuit consists of 480 ohms resistor a 9.5MF capacitor and 2.91H inductor. If the supply voltage is 230V at 50Hz Calculate :

- (i) Capacitive reactance (iii) Total impedance  
 (ii) Inductive reactance (iv) Power factor 8

## UNIT – IV

- IX (a) Compare inverter and UPS by listing any 4 points. 8

- (b) Write short note on :

- (i) FDMA (ii) TDMA 7

OR

- X (a) Write short note on :  
 (i) Integrated circuit (ii) Micro controllers 8

- (b) List 7 internal parts of a Micro controller with a block diagram. 7