

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — APRIL, 2018

ELECTRICAL AND ELECTRONICS ENGINEERING

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

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

1. Define maximum value.
2. Enlist any two applications of single phase induction motor.
3. How to classify the transformers based on construction ?
4. State the working principle of a moving coil instrument.
5. Name any two active components.

(5 × 2 = 10)

PART — B

(Maximum marks : 30)

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

1. Describe the working of lead acid cell.
2. State and explain Faraday's Laws of electromagnetic induction.
3. Explain the working of an auto transformer.
4. How to produce rotating magnetic field in a single phase induction motor ?
5. State the function of an Arc furnace.
6. Explain the working of an NPN transistor.
7. Enlist any six type of resistors used in electronic circuits.

(5 × 6 = 30)

PART — C

(Maximum marks : 60)

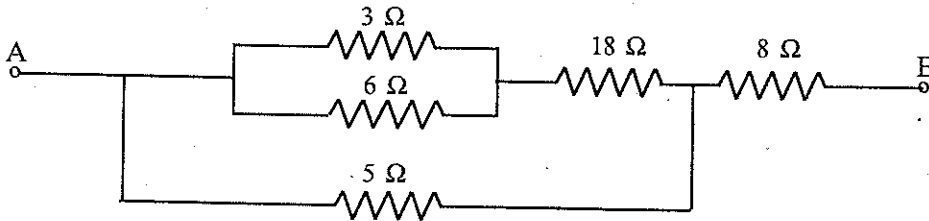
(Answer *one* full question from each unit. Each full question carries 15 marks.)

UNIT — I

- III (a) What is delta connection ? Show the relation between line current and phase current in delta connection. 8
- (b) State the methods of charging a lead acid cell. 7

OR

- IV (a) Explain the construction details of a three phase alternator. 7
- (b) Calculate the effective resistance of the following combination of resistances and the voltage drop across each resistances when a potential difference of 60V is applied between points A and B.



8

UNIT — II

- V (a) Explain the working of 3 phase induction motor. 8
- (b) Derive the emf equation of a transformer. 7

OR

- VI (a) Explain the working of 3 point starter with neat figure. 9
- (b) Enlist the applications of DC motor. 6

UNIT — III

- VII (a) Describe the working of dynamo meter type watt meter. 7
- (b) State the principle of induction heating and explain about direct core type induction furnace. 8

OR

- VIII (a) Explain the working of a moving iron repulsion type instrument. 8
- (b) Explain the principle of dielectric heating. 7

UNIT — IV

- IX (a) Explain the working principle of SCR. 9
- (b) Draw the symbol and truth table of AND, NAND and NOR gates. 6

OR

- X (a) Explain the working of a bridge rectifier with neat figure and input output wave forms. 9
- (b) Enlist any six applications of SCR. 6