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03 Hours / 70 Marks Seat No. | | | | | | | | |

Instructions – (1) All Questions are *Compulsory.*

(2) Answer each next main Question on a new page.

(3) Illustrate your answers with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Use of Non-programmable Electronic Pocket Calculator is permissible.

(7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following: **10**

a) State Ohms Law.

b) Draw waveform of alternating current (AC).

c) State application of Lenz's Law.

d) State EMF equation of transformer.

e) List losses in transformer.

f) State different types of single phase induction motor.

g) State applications of Clip on meter.

Marks

2. Attempt any THREE of the following: **12**

a) With the help of neat diagram explain working of shaded pole induction motor.

b) A 1 - phase, 2 KVA, 230 / 115 V transformer used in laboratory. Calculate:

i) Primary winding turn

ii) Secondary winding turn

iii) Turn Ratio

iv) Current Ratio

c) State application of following motor:

i) Stepper Motor

ii) Split Phase Induction Motor

d) State and Explain KCL.

3. Attempt any THREE of the following: **12**

a) Give the classification of electric drives. State factors for selection of drives for different motors.

b) Write any two application of the following:

i) DC Shunt Motor

ii) DC Series Motor

c) Define:

i) Magnetic Flux

ii) Magnetic Flux Density

iii) MMF

iv) Reluctance

d) Define:

i) Maximum Value

ii) Cycle

iii) Frequency

iv) Time Period

Marks

4. Attempt any THREE of the following: **12**

a) Write any two application of the following:

i) MCB

ii) MCCB

b) Compare Electric circuit and Magnetic circuit. (Any four points)

c) Explain working of DC motor with neat diagram.

d) Define earthing and state its types.

e) Define fuse and state its types.

5. Attempt any TWO of the following: **12**

a) Compare Squirrel cage induction motor and slipring induction motor. (Any 6 points)

b) Compare Auto transformer and Two winding transformer. (Any 6 points)

c) Using series parallel combination finf the resistance between terminal A and B of network Fig. No. 1.

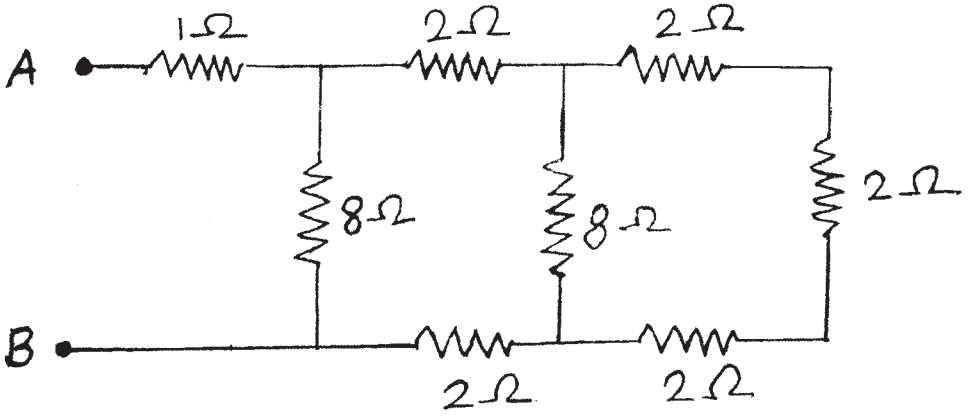

Fig. No. 1

Marks

6. Attempt any TWO of the following: **12**

a) Explain principle of operation of universal motor with neat sketch. Write any two application of universal motor.

b) In the networks shown below find current I in the circuit using KVL. Fig. No. 2.

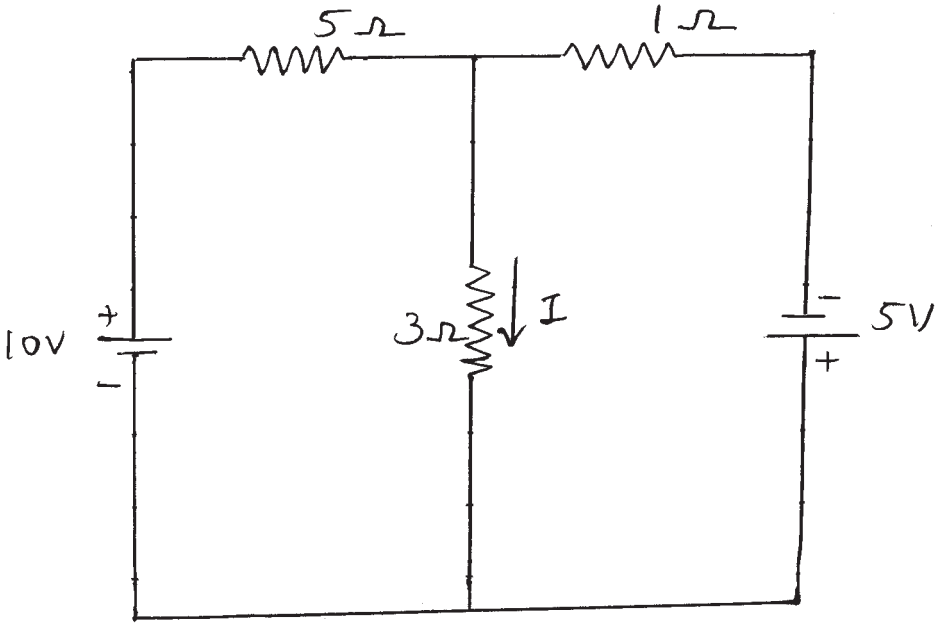

Fig. No. 2

c) Draw and explain B – H curve of magnetic material. Give two application of statically induced emf.