



Subject: Physics
Roll No.: _____

SUCCESSOR'S

Inter Part-II Series Test No. 04 2017

Objective

Max. Marks: 08
Time: 10 Mins

Q.1 MCQs

Note: You have four choices for each objective type question as a, b, c, d. Which answer you consider correct, fill that circle in front of that question number. Use marker or pen to fill circles. Cutting or filling two or more circles will result in zero mark in that question.

1 The basic circuit element in a D.C circuit which controls the current and voltage is

- a) Capacitor b) Resistor c) Inductor d) Transistor

2 Lenz's law is in accordance with law of conservation of

- a) Mass b) Momentum c) Charge d) Energy

3 EMF is induced due to change in

- a) Charge b) Current c) Magnetic flux d) Electric field

4 Self inductance doesn't depend upon

- a) Number of turns of the coil b) Area of cross-section of the core
c) Nature of material of the core d) Current through inductor

5 When the back emf in a circuit is zero, it draws

- a) Zero current b) Maximum current c) Minimum current d) Average current

6 Inductance of the coil can be increased by using

- a) Paramagnetic core b) Diamagnetic core
c) Ferromagnetic core c) Antiferromagnetic core

7 The notation for Henry is

- a) $V.S^{-1}A$ b) $N.m.A^{-1}$ c) $V^{-1}.S.A$ d) $V.S.A^{-1}$

8 A generator converts mechanical energy into

- a) Chemical energy b) Light energy c) Heat energy d) Electrical energy

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Date: / /

Roll No.: _____

Roll No. (in words):

Candidate's

Signature

Note: You have four choices for each objective type question as a, b, c, d. Which answer you consider correct, fill that circle in front of that question number. Use marker or pen to fill circles. Cutting or filling two or more circles will result in zero mark in that question.

- | | | | | |
|---|-----|-----|-----|-----|
| 1 | (A) | (B) | (C) | (D) |
| 2 | (A) | (B) | (C) | (D) |
| 3 | (A) | (B) | (C) | (D) |
| 4 | (A) | (B) | (C) | (D) |
| 5 | (A) | (B) | (C) | (D) |
| 6 | (A) | (B) | (C) | (D) |
| 7 | (A) | (B) | (C) | (D) |
| 8 | (A) | (B) | (C) | (D) |



Subject: Physics
Roll No.: _____

SUCCESSOR'S

Inter Part-II Series Test No. 04 2017

Subjective

Max. Marks: 32

Time: 80 Mins

Q.2 Write short answers to following questions.

2 x 12 = 24

- i. Does the induced emf always act to decrease the magnetic flux through a circuit?
- ii. Show that ϵ and $\Delta\phi/\Delta t$ have the same units.
- iii. Can a step-up transformer increase the power level?
- iv. What changes are required to turn the D.C motor into a D.C generator?
- v. Does the induced emf always act to decrease the magnetic flux through a circuit?
- vi. State Faraday's law. Also write its mathematical form.
- vii. Four unmarked wires emerge from a transformer. What steps would you take to determine the turns ratio?
- viii. In a transformer, there is no transfer of charge from the primary to the secondary. How is, then the power transferred?
- ix. What is back motor effect in generators?
- x. Differentiate between step up and step down transformer.
- xi. On what factors self-inductance depends?
- xii. A metal rod of length 25 cm is moving at a speed of 0.5 ms^{-1} in the direction perpendicular to 0.25 T magnetic field. Find the EMF produced in the rod.

Long Questions

2 x 4 = 08

Q.3 (a) Derive an expression for the energy stored in an inductor and electric density.

Q.3 (b) A power line 10.0 m high carries a current 200 A. Find the magnetic field of the ground.