4 ● RF(A)/100/3322

ಒಟ್ಟು ಮುದ್ರಿತ ಪುಟಗಳ ಸಂಖ್ಯೆ : 8 ]
Total No. of Printed Pages : 8 ]
ಒಟ್ಟು ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ : 8 ]
Total No. of Questions : 8 ]

**A**

**CCE RF**
**NEW SYLLABUS**

Question Paper Serial No. **100**

**ಸಂಕೇತ ಸಂಖ್ಯೆ : 51**

**Code No. : 51**

## ವಿಷಯ : ಎಲಿಮೆಂಟ್ಸ್ ಆಫ್ ಎಲೆಕ್ಟ್ರಿಕಲ್ ಇಂಜಿನಿಯರಿಂಗ್ - IV

## Subject : ELEMENTS OF ELECTRICAL ENGINEERING-IV

**( ಶಾಲಾ ಅಭ್ಯರ್ಥಿ / Regular Fresh )**

ದಿನಾಂಕ : 08. 04. 2023 ] [ Date : 08. 04. 2023

ಸಮಯ : ಬೆಳಗ್ಗೆ 10-30 ರಿಂದ ಮಧ್ಯಾಹ್ನ-1-45 ರವರೆಗೆ ] [ Time : 10-30 A.M. to 1-45 P.M.

ಪರಮಾವಧಿ ಅಂಕಗಳು : 80 ] [ Max. Marks : 80

**General Instructions to the Candidate :**

1. This Question Paper consists of 8 subjective and objective types of questions.
2. This question paper has been sealed by reverse jacket. You have to cut on the right side to open the paper at the time of commencement of the examination. Check whether all the pages of the question paper are intact.
3. Follow the instructions given against both the objective and subjective types of questions.
4. Figures in the right hand margin indicate maximum marks.
5. The maximum time to answer the paper is given at the top of the question paper. It includes 15 minutes for reading the question paper.

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ಇಲ್ಲಿಂದ ಕತ್ತರಿಸಿ

TEAR HERE TO OPEN THE QUESTION PAPER
ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯನ್ನು ತೆರೆಯಲು ಇಲ್ಲಿ ಕತ್ತರಿಸಿ

Tear here

*Note :* Answer *all* the questions.

1. Four alternatives are given for each of the following questions / incomplete statements. Select the most appropriate alternative and write it in the answer book along with its alphabet :

$10 \times 1 = 10$

i) For a sine wave form factor is

(A) 1·11 (B) 0·707

(C) 1·41 (D) 0·637.

ii) The time taken to complete one cycle is called

(A) Form factor (B) Average value

(C) Time period (D) Amplitude.

iii) The direction of induced *emf* in a generator is given by

(A) Fleming's left hand rule

(B) Lenz law

(C) Ohm's law

(D) Fleming's right hand rule.

iv) Alternator is a/an

(A) A. C. motor (B) A. C. generator

(C) D. C. generator (D) D. C. motor.

v) The purpose of oil in a transformer tank is provided

(A) for cooling purpose (B) to reduce loss

(C) to increase heat (D) to decrease heat.

vi) Which one of the following uses coal as fuel ?

(A) Hydroelectric power plant

(B) Nuclear power plant

(C) Thermal power plant

(D) Diesel power plant.

vii) Which of the following is a non-renewable source of energy ?

(A) Solar power (B) Hydroelectric power

(C) Nuclear power (D) Wind power.

viii) The autotransformer works on the principle of

(A) Mutual induction

(B) Dynamically induced *emf*

(C) Statically induced *emf*

(D) Self induction.

ix) A pure semiconductor is called

(A) Intrinsic semiconductor

(B) Extrinsic semiconductor

(C) P-type semiconductor

(D) N-type semiconductor.

x) Arsenic is a

(A) Trivalent impurity

(B) Tetravalent impurity

(C) Quadrivalent impurity

(D) Pentavalent impurity.

2. a) Explain power factor. 2

b) Explain the following terms : 3

i) Average value

ii) Amplitude.

c) Draw the neat diagram of sine wave and mark the following : 5

i) Frequency

ii) Amplitude.

3. a) List the different types of Induced *emf*. 2

b) Write a short note on three-phase system. 3

c) Draw the neat diagram of A.C. generator and label the parts. 5

4. a) List the types of semiconductor. 2

b) What is mutually induced *emf* ? 3

c) With neat sketch, explain the working of transformer. 5

5. a) What is diode ? 2

b) List any six parts of transformer. 3

c) Draw the neat diagram of electric fan and label the parts. 5

6. a) Write any two parts of wind power plant. 2

b) Write a short note on diesel power plant. 3

c) Draw the neat diagram of solar power plant and label the parts. 5

7. a) What do you mean by doping ? 2

b) Write a short note on A.C. motor. 3

c) Explain Faraday's laws of electromagnetic induction. 5

8. a) Draw the symbolic representation of diode and name the terminal. 2

b) Mention the types of non-renewable source of electrical energy. 3

c) Draw the symbolic representation of *N-P-N* and *P-N-P* transistors and name the terminals. 5