

CCE RF/RR (A)/666/041

**A**

ಮಾರ್ಚ್/ಏಪ್ರಿಲ್ 2024 ರ ಪರೀಕ್ಷೆ - 1  
MARCH/APRIL 2024 EXAMINATION-1

ಒಟ್ಟು ಮುದ್ರಿತ ಪುಟಗಳ ಸಂಖ್ಯೆ : 8 ]

Total No. of Printed Pages : 8 ]

ಒಟ್ಟು ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ : 8 ]

Total No. of Questions : 8 ]

**CCE RF/RR  
FULL SYLLABUS**

Question Paper Serial No.

ಸಂಕೇತ ಸಂಖ್ಯೆ : **51**

Code No. : **51**

ವಿಷಯ : ಎಲಿಮೆಂಟ್ಸ್ ಆಫ್ ಎಲೆಕ್ಟ್ರಿಕಲ್ ಇಂಜಿನಿಯರಿಂಗ್ - IV

**Subject : ELEMENTS OF ELECTRICAL ENGINEERING-IV**

(ಶಾಲಾ ಅಭ್ಯರ್ಥಿ / ಶಾಲಾ ಪುನರಾವರ್ತಿತ ಅಭ್ಯರ್ಥಿ)

(Regular Fresh / Regular Repeater)

ದಿನಾಂಕ : 03. 04. 2024 ]

[ Date : 03. 04. 2024

ಸಮಯ : ಬೆಳಿಗ್ಗೆ 10-15 ರಿಂದ ಮಧ್ಯಾಹ್ನ 1-30 ರವರೆಗೆ ] [ Time : 10-15 A.M. to 1-30 P.M.

ಗರಿಷ್ಠ ಅಂಕಗಳು : 80 ]

[ Max. Marks : 80

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**General Instructions to the Candidate :**

1. This question paper consists of 8 questions in all.
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 ( **Follow the arrow** ). **Do not cut the left side to open the paper**. Check whether all the pages of the question paper are intact.
3. Follow the instructions given against the questions.
4. Figures in the right hand margin indicate maximum marks for the questions.
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.
6. Ensure that the Version of the question paper distributed to you and the Version printed on your admission ticket is the same.

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TEAR HERE TO OPEN THE QUESTION PAPER

03. 04. 2024



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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 × 1 = 10



- i) Form factor is the ratio of
- (A) Average value / RMS value
  - (B) Maximum value / Average value
  - (C) RMS value / Average value
  - (D) Average value / Maximum value
- ii) For a sine wave average value is 
- (A) 0.637
  - (B) 0.707
  - (C) 1.11
  - (D) 1.414
- iii) The phenomenon of electromagnetic induction is discovered by
- (A) Ohm 
  - (B) Coulomb
  - (C) Faraday
  - (D) Henry

iv) Slip rings are made of

- (A) Brass (B) Copper  
(C) Silicon steel (D) Aluminium

v) In one-to-one ratio transformer



- (A)  $I_2 > I_1$  (B)  $N_1 < N_2$   
(C)  $N_1 > N_2$  (D)  $N_1 = N_2$

vi) The electric iron is an example for








- (A) Heating effect (B) Magnetic effect  
(C) Lighting effect (D) Chemical effect

vii) Which one is the non-renewable sources of energy ?

- (A) Hydroelectric power (B) Thermal power  
(C) Tidal power (D) Solar power



- viii) Among all which power plant uses coal as a fuel ?
- (A) Geo-thermal power plant
  - (B) Thermal power plant
  - (C) Nuclear power plant 
  - (D) Hydroelectric power plant
- ix) An impurity which donates the electrons is
- (A) Donor impurity
  - (B) Acceptor impurity
  - (C) Doping
  - (D) Both acceptor and donor impurities
- x) A diode has 
- (A) one terminal
  - (B) four terminals
  - (C) three terminals
  - (D) two terminals
2. a) Explain A.C. 2
- b) Explain the following terms : 3
- i) RMS value 
  - ii) Frequency

- c) Draw the sine wave and mark the following : 5
- i) Negative half-cycle
- ii) Amplitude 
3. a) Explain A.C. motor. 2
- b) Explain self-induced e.m.f. 3
- c) Explain with neat diagram the phenomenon of electromagnetic induction. 5
4. a) List any four applications of transistor. 2
- b) Write a short note on auto transformer.  3
- c) With a neat sketch explain the working principle of transformer. 5
5. a) List the different sources of electrical energy. 2
- b) Write a short note on thermal power plant. 3



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

6. a) Explain doping. 2

b) Compare renewable and non-renewable sources of energy.



3




c) Draw the symbolic representation of *N-P-N* and *P-N-P* transistor and label the terminals. 5

7. a) Draw the symbolic representation of diode and label the terminals.  2

b) Explain three phase star connection. 3

c) Draw a neat diagram of electric iron and label the parts.

5

8. a) Write any two advantages of I.C.  2
- b) List any six parts of A.C. Generator. 3
- c) Explain with neat sketch, working principle of three-phase  
 A.C. motor (induction motor).  5
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DO NOT WRITE ANYTHING HERE