ಒಟ್ಟು ಮುದ್ರಿತ ಪುಟಗಳ ಸಂಖ್ಯೆ : 4]

Total No. of Printed Pages : 4]

ಒಟ್ಟು ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ : 9]

Total No. of Questions : 9]

ಸಂಕೇತ ಸಂಖ್ಯೆ : **73**
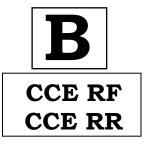
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B

CCE RF
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REVISED & UNREVISED

Question Paper Serial No. **91**

TEAR HERE TO OPEN THE QUESTION PAPER

ವಿಷಯ : ಎಲಿಮೆಂಟ್ಸ್ ಆಫ್ ಎಲೆಕ್ಟ್ರಾನಿಕ್ಸ್ ಇಂಜಿನಿಯರಿಂಗ್

Subject : ELEMENTS OF ELECTRONICS ENGINEERING

(ಶಾಲಾ ಅಭ್ಯರ್ಥಿ & ಪುನರಾವರ್ತಿತ ಶಾಲಾ ಅಭ್ಯರ್ಥಿ / **Regular Fresh & Regular Repeater**)

ದಿನಾಂಕ : 04. 04. 2020]

[Date : 04. 04. 2020

ಸಮಯ ‌ಬೆಳಿಗ್ಗೆ 9-30 ರಿಂದ ಮಧ್ಯಾಹ–12-45 ರವರೆಗೆ]

[Time : 9-30 A.M. to 12-45 P.M.

ಪರಮಾವಧಿ ಅಂಕಗಳು : 90]

[Max. Marks : 90

General Instructions to the Candidate :

1. This Question Paper consists of 9 objective and subjective 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.

RF & RR (B)-670

[Turn over

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 × 1 = 10

    i)   DIL package means
         (A)   dual-in-line   (B)   dipped-in-lane
         (C)   dropped-in-line   (D)   diffused-in-lane.

    ii) An integrated circuit is
         (A)   a complicated circuit
         (B)   an integrating device
         (C)   much costlier than a transistor
         (D)   fabricated on a tiny silicon chip.

    iii) Monolithic ICs are fabricated within a
         (A)   Mica   (B)   PVC
         (C)   Silicon   (D)   Copper.

    iv) Number of terminals / pins used in Op-Amp are
         (A)   2   (B)   8
         (C)   5   (D)   10.

    v)   Input impedance of Op-Amp is
         (A)   1 Ω to 100 Ω   (B)   100 Ω to 200 Ω
         (C)   500 Ω to 800 Ω   (D)   10 kΩ to 100 MΩ.

    vi) The base of binary number system is
         (A)   2   (B)   5
         (C)   10   (D)   16.

    vii) The OR gate has
         (A)   only one input   (B)   two or more inputs
         (C)   only two inputs   (D)   only two outputs.

    viii) Output of OR gate is zero (0) when its two inputs are
         (A)   high   (B)   low
         (C)   different   (D)   same.

    ix) The basic unit of flip-flop is
         (A)   feedback input   (B)   feedback output
         (C)   latch   (D)   triggered output.

    x)   The clock cycle is calculated by
         (A)   flip-flop   (B)   rectifier
         (C)   transistor   (D)   counter.

2. a) What is an integrated circuit ? 2

   b) List the applications of ICs. 3

   c) Draw a neat circuit diagram of Half wave rectifier and show its input and output waveforms. 5

3. a) List any two levels of integration. 2

   b) Explain thin film IC. 3

   c) Draw a neat circuit diagram of P-N junction under forward bias and reverse bias. 5

4. a) Define To-5 IC package. 2

   b) Distinguish between thick and thin film IC. 3

   c) Which component of IC is most complicated while fabricating integrated circuit ? Give reason. 5

5. a) Define operational amplifier. 2

   b) Explain pin configuration of Op-Amp. 3

   c) Draw a neat symbol of Op-Amp and explain the function of each pin. 5

6. a) What is decimal number system ? 2

   b) Explain binary number system. 3

   c) Convert binary numbers $(11001 \cdot 011)_2$ and $(110011)_2$ into decimal. 5

7. a) What is the output of OR gate when both inputs are 00 and 01 ? 2

   b) Explain NOR gate IC. 3

   c) Draw a neat symbol of NOT and NAND gate IC and write truth tables. 5

8. a) How many inputs are there in SR and clocked SR flip-flops ? 2

   b) Explain shift register. 3

   c) Distinguish between RS and JK flip-flops. 5

9. a) What is counter ? 2

   b) Explain synchronous counter. 3

   c) Explain working of 2-bit asynchronous binary counter. 5