

**CCE RR**

ಸಂಕೇತ ಸಂಖ್ಯೆ : 73

Code No. : 73

ವಿಷಯ : ಎಲಿಮೆಂಟ್ಸ್ ಆಫ್ ಎಲೆಕ್ಟ್ರಾನಿಕ್ಸ್ ಇಂಜಿನಿಯರಿಂಗ್

**Subject : ELEMENTS OF ELECTRONICS ENGINEERING**

( ಹೊಸ ಪಠ್ಯಕ್ರಮ / New Syllabus )

( ಪುನರಾವರ್ತಿತ ಶಾಲಾ ಅಭ್ಯರ್ಥಿ / Regular Repeater )

*General Instructions :*

- i) The Question-cum-Answer Booklet consists of 9 objective and subjective types of questions.
- ii) Space has been provided against each objective type question. You have to choose the correct choice and write the complete answer in the space provided.
- iii) For subjective type questions enough space for each question has been provided. You have to answer the questions in the space.
- iv) Follow the instructions given against both the objective and subjective types of questions.
- v) Candidate should not write the answer with pencil. Answers written in pencil will not be evaluated ( Except Graphs, Diagrams & Maps ).
- vi) In case of Multiple Choice, Fill in the blanks and Matching questions, scratching / rewriting / marking is not permitted, thereby rendering to disqualification for evaluation.
- vii) For reading the questions 15 minutes of extra time has been provided.
- viii) Do not write anything in the space provided in the right side margin.

**RR-0322**

[ Turn over

Note : Answer all the questions.

1. Fill in the blanks with the appropriate figure/word(s) by selecting from the choices given in the brackets :  $10 \times 1 = 10$
- i) Adding an impurity to pure semiconductor is called .....  
( donor, acceptor, doping )
- ii) In a *p*-type semiconductor majority charge carriers are .....  
( holes, electrons, protons )
- iii) An oscillator generates *ac* signals by using .....  
( *ac* energy, *dc* energy, both *ac* energy and *dc* energy )
- iv) A diode which is used in voltage regulator is .....  
( Zener diode, PN-junction diode, Light emitting diode )
- v) NAND and NOR gates are also known as .....  
( inverter gate, converter gate, universal gate )
- vi) An octal system employed in early computers has been replaced by .....  
( decimal system, hexadecimal system, binary system )
- vii) Op-Amp consumes .....  
( high power, medium power, less power )
- viii) Intel 8085 is used in .....  
( calculators, rectifiers, inverters )
- ix) The wiring of integrated circuit is .....  
( complicated, very complicated, very simple )
- x) LSI circuit has .....  
( more than 100 gates, less than 100 gates, exactly 100 gates )

2. a) What is an amplifier ? 2  
b) Mention any three uses of amplifier. 3  
c) Explain donor impurity and acceptor impurity with examples. 5
3. a) What do you mean by a transistor ? 2  
b) Name the types of transistors and mention the semiconducting materials that are used in the manufacture of transistors. 4  
c) List any four important properties of semiconductors. 4
4. a) Define diode. 2  
b) Explain with a neat circuit the working of PN-junction diode in forward bias condition. 4  
c) What is a rectifier ? Name the types of rectifiers. 4
5. a) What is a logic gate and where is it used ? 3  
b) Name the three kinds of basic gates. 3  
c) Draw the symbol of NOR gate and write its truth table. 4
6. a) Define operational amplifier. 2  
b) Draw a neat block diagram of Op-Amp. 4  
c) Mention any four advantages of Op-Amp. 4
7. a) What do you mean by integrated circuit ? 2  
b) Write the classification of integrated circuit. 4  
c) List the uses of integrated circuit in electric field. 4
8. a) What is an octal system ? 2  
b) Convert 1210 into binary number. 4  
c) Define flip-flop. Mention the uses of flip-flops. 4
9. a) Define microprocessor. 2  
b) Give any two applications of microprocessor. 2  
c) Write short notes on the following : 6  
i) Register  
ii) Counter  
iii) Oscillator.