

17563

16117

3 Hours / 100 Marks

Seat No.

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Instructions : (1) All Questions are *compulsory*.

(2) Answer each next main Question on a new page.

(3) Illustrate your answers with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Use of Non-programmable Electronic Pocket Calculator is permissible.

Marks

1. Attempt any FIVE :

20

(a) Determine the value of resistance for following color code :

(i) Red, Red, Orange.

(ii) Blue, Red, Black.

(iii) Orange, Yellow, Red.

(iv) Green, Brown, Black.

(b) Compare conductor and insulator. (any four points)

(c) State the working principle of LDR with the help of neat diagram.

(d) What is combined loop control system? State its type.

(e) Compare analog and digital electronics. (four points)

(f) What is ROM ? List the types of ROM.

(g) List the applications of blow room. (any four)

2. Attempt any FOUR :**16**

- (a) List the types of capacitors. State its four specification.
- (b) State and explain the types of semi-conductors.
- (c) Explain open loop control system with the help of example.
- (d) Draw and explain R-S flip-flop. Write truth table.
- (e) List any eight feature of 8051.
- (f) State working principle of card autoleveller. State its two applications.

3. Attempt any FOUR :**16**

- (a) Explain operation of unbiased PN junction diode.
- (b) State the need of signal conditioning circuit in measurement system.
- (c) Explain the closed loop control system. How it differs from open loop system ?
- (d) Explain working of asynchronous UP counter. (3-bit)
- (e) Define PLC. Draw its neat labelled diagram.
- (f) List any four applications of yarn evenness tester.

4. Attempt any FOUR :**16**

- (a) Draw a neat diagram of full wave rectifier. Also draw the input and output waveform of full wave rectifier.
- (b) Explain the following regions of transistor :
 - (i) Active region
 - (ii) Cut-off region
- (c) Compare RTD & thermistor (any four points).
- (d) Draw and explain working of bourdon tube.
- (e) Draw the symbol and truth table for following logic gates :
 - (i) AND
 - (ii) OR
- (f) State the applications of tensile testing sensor in textile industry.

5. Attempt any FOUR :**16**

- (a) Define inductor. State its types.
- (b) Draw and explain the working of PNP transistor.
- (c) Draw a neat labelled block diagram of op-amp. List its features. (any two)
- (d) Explain how LVDT is used for displacement measurement.
- (e) What is solenoid ? List its applications. (any two)
- (f) Compare RAM & ROM. (any four points)

6. Attempt any FOUR :**16**

- (a) Define active and passive components.
 - (b) Draw the VI characteristic of forward biased and reversed bias P-N junction diode.
 - (c) Draw a neat diagram of inverting amplifier. State the mathematical expression for voltage gain.
 - (d) State the principle of strain gauge. List its applications. (any two)
 - (e) With the help of neat diagram explain how capacitive sensor can be used for level measurement.
 - (f) Convert the following decimal number into binary :
 - (i) 10 (ii) 28 (iii) 39 (iv) 01
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