17563

21819

3 Hours / 100 Marks Seat No. | | | | | | | | |

Instructions – (1) All Questions are *Compulsory.*

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

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

(4) Use no Non- programmable Electronic Pocket Calculator is permissible.

(5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following: **20**

a) Define active and passive components Give two examples of each

b) Explain classification of materials.

c) What is extrinsic semiconductor? Explain it.

d) Enlist types of optical sensors describe working principle of LDR.

e) Draw block diagram of open loop control system. Enlist advantages of it.

f) Draw logic symbol of D flip flop give its truth table and explain it.

g) Explain application of blow room in textile.

Marks

2. Attempt any TWO of the following: **16**

a) Explain working of P-N junction diode when it is unbiased, forward biased and reverse biased also draw its V.I characteristics.

b) Describe working principle of bourdon tubes and bellows.

c) Draw architecture of 8051 and list its features.

3. Attempt any FOUR of the following: **16**

a) Draw and explain construction of npn transistor.

b) Which type of sensor can be used for displacement measurement? Explain working of any one.

c) Draw differential amplifier using op-amp and describe it's working.

d) Draw and explain automatic textile control system.

e) What is ROM & RAM? State difference between them.

f) Explain card autoleveller control system.

4. Attempt any FOUR of the following: **16**

a) Determine the value of resistor for colour coding given below:

(i) Red brown yellow gold

(ii) Violet red orange silver

b) Explain working of transistor as switch.

c) State need of bridges and explain principle of signal conditioning.

d) Explain closed loop control system.

e) Draw and explain block diagram of PLC.

f) Explain tensile testing control system.

Marks

5. Attempt any FOUR of the following: **16**

a) State types of inductors enlist general specifications of inductor.

b) Explain working principle of RTD with neat diagram.

c) Draw symbol and truth table of:

(i) And gate

(ii) OR gate

(iii) Nand gate

(iv) Not gate

d) What is race around? How it is to be eliminated?

e) Compare analog and digital electronics.

f) Explain yarn evenness tester control system.

6. Attempt any FOUR of the following: **16**

a) Draw block diagram of op-amp. Explain function of each block in detail.

b) Draw and explain operation of transistor as an amplifier.

c) Explain advantages of closed loop system over open loop control system.

d) Describe weight measurement using strain gauge.

e) Draw and explain asynchronous 3-bit up-counter.

f) Explain automatic weft straightening control system.
