

22482

24225

3 Hours / 70 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.

Marks

1. Attempt any FIVE of the following :

5 × 2 = 10

- (a) List different types of microphone.
- (b) Define :
 - (i) Aspect ratio
 - (ii) Brightness
- (c) List the two sensors used in smart wristband.
- (d) State any two applications of wearable antenna.
- (e) List the specifications of Laser printer.
- (f) Differentiate between mono and stereo amplifier w.r.t.
 - (i) Number of amplifiers used
 - (ii) Application
- (g) List the components used in OLED.

2. Attempt any THREE of the following :

3 × 4 = 12

- (a) Draw and explain block diagram of Hi-Fi amplifier.
- (b) State Grassman's law. Draw the sketch of additive mixing.



- (c) List any eight CCIR-B standards for colour signal transmission and reception.
- (d) Explain the working principle of Digital Camcorder.

3. Attempt any THREE of the following :

3 × 4 = 12

- (a) Draw and explain working principle of condenser type microphone.
- (b) Explain the picture processing in digital camera using CCD sensors.
- (c) State working principle of scanner. List its any 2 types and 2 specifications.
- (d) Draw and explain functional block diagram of Virtual Reality (VR) Headset.

4. Attempt any THREE of the following :

3 × 4 = 12

- (a) Compare woofer, mid-range and tweeter on the basis of following parameters :
 - (i) Definition
 - (ii) Frequency range
 - (iii) Size
 - (iv) Weight
- (b) List any two wiring and safety instructions of microwave oven.
- (c) Explain construction and working principle of wearable antenna.
- (d) Draw and explain block diagram of smart wristband.
- (e) Draw and explain functional block diagram of CCTV.

5. Attempt any TWO of the following :

2 × 6 = 12

- (a) Draw and explain block diagram of washing machine. List its specifications.
- (b) Draw and explain vestigial sideband transmission (VSB). State its any 4 advantages.
- (c) Explain working principle of barcode reader with neat diagram. State its applications.

6. Attempt any TWO of the following :

$2 \times 6 = 12$

- (a) Draw and explain block diagram of colour TV receiver.
 - (b) Draw and explain working principle of microwave oven. Give its 4 electrical specifications.
 - (c) Draw and explain block diagram of LED projector. State its troubleshooting procedure.
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