

22482

12425

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.
 - (5) Assume suitable data, if necessary.

Marks

1. Attempt any FIVE of the following :

5 × 2 = 10

- (a) Define characteristics of sound signal :
 - (i) Fidelity
 - (ii) Sensitivity
- (b) Define :
 - (i) Image continuity
 - (ii) Aspect Ratio
- (c) State and justify which type of washing machine having more advantages.
- (d) List any two wiring and safety instructions for use of microwave oven.
- (e) List the two sensors used in smart wrist band.
- (f) List the four specifications of Scanner.
- (g) For Woofer and Tweeter, comment on the following factors :
 - (i) Frequency Range
 - (ii) Size of Speakers



2. Attempt any FOUR of the following :**4 × 3 = 12**

- (a) Explain the working of microwave oven and give its 2 electrical specifications.
- (b) Explain with sketch the working of Hi-Fi amplifier.
- (c) Differentiate between positive and negative modulation with respect to :
 - (i) Definition
 - (ii) Waveform
 - (iii) Effect of noise
- (d) Explain working principle of wearable antenna and state its two applications.
- (e) List any six specifications of CCIR-B Standards for colour signal transmission and reception.

3. Attempt any FOUR of the following :**4 × 3 = 12**

- (a) Explain picture processing and picture storage in digital camera.
- (b) Justify the need of adjusting iris mode, focus mode and white balance mode in CCTV.
- (c) Explain with sketch the working principle of carbon Microphone.
- (d) Explain VSB transmission. State its any two advantages.
- (e) Explain in brief various types of screen used in VR headset.

4. Attempt any THREE of the following :**3 × 4 = 12**

- (a) Draw labelled block diagram of MP3 player.
- (b) Explain the following terms with respect to smart wrist band :
 - (i) Firmware
 - (ii) Storage

- (c) Describe with the help of diagram Front Poarch, Back Poarch and line sync pulse in Horizontal sync pulse.
- (d) Describe the working of Laser Printer with functional block diagram.
- (e) Explain VR connectivity with work station using USB and Bluetooth.

5. Attempt any THREE of the following :

3 × 4 = 12

- (a) Draw block diagram of colour TV Receiver.
- (b) State necessity of crossover network. Draw and explain three way crossover network.
- (c) (i) Name the block diagram shown in figure 1.
(ii) Identify the block "A" and "B" in given block diagram :

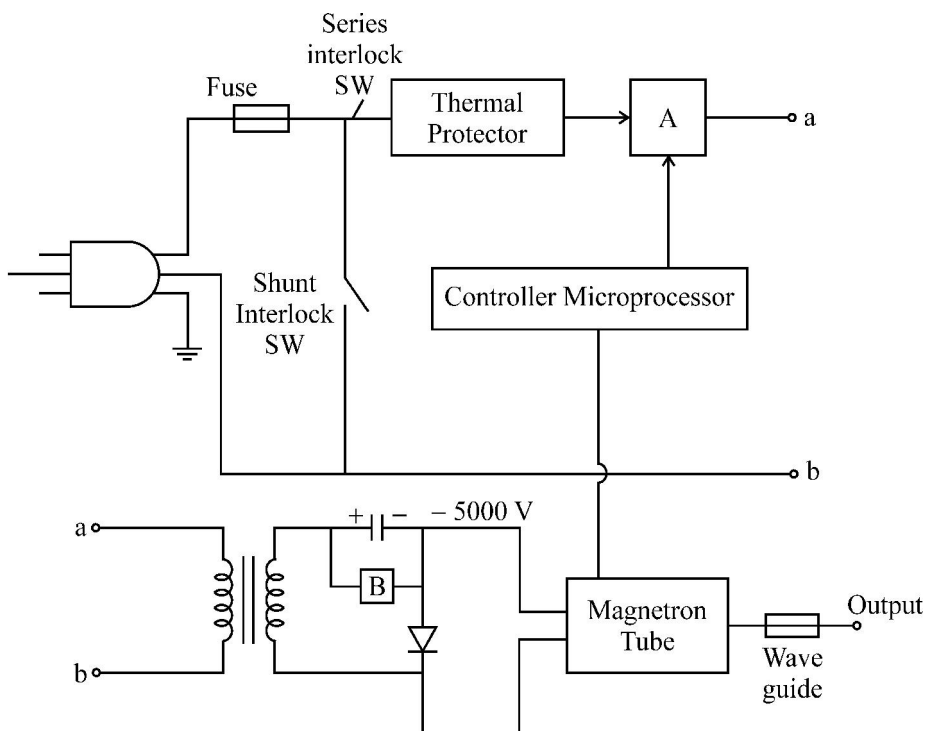


Figure 1

- (d) Draw the block diagram of washing machine and state types of washing machine.
- (e) Explain the function of various controls of LED projector.

6. Attempt any TWO of the following :

$2 \times 6 = 12$

- (a) 'OLED TV are better than LED TV for both work and home use'. Justify.
 - (b) Explain the working of camcorder with help of block diagram. Also list it four electrical specifications.
 - (c) Explain with proper steps the complete installation process of CCTV.
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