

22482

22232

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Illustrate your answers with neat sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Assume suitable data, if necessary.
 - (5) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (6) Preferably, write the answers in sequential order.

Marks

1. Attempt any FIVE of the following :

5 × 2 = 10

- (a) Write any four basic characteristics of sound signal.
- (b) Define :
 - (1) Aspect Ratio
 - (2) Contrast
- (c) Explain the wiring instruction for a microwave oven.
- (d) State important specifications of washing machines.
- (e) List the two sensors used in smart wristband.
- (f) List the four specifications of scanners.
- (g) Draw the frequency response of different speakers.

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

- (a) Explain with the help of block diagram operation of washing machine.
- (b) Explain with sketch the working of Hi-Fi amplifier.
- (c) Compare LED and OLED T.V. (Six point).
- (d) Explain with the help of block diagram working of smart wristband.
- (e) Explain vestigial side band transmission. State its any two advantages.

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

- (a) Compare digital camera and camcorder.
- (b) Justify the need of adjusting iris mode, focus mode and white balance mode in CCTV.
- (c) Explain with sketch the working principle of condenser microphone.
- (d) Draw with label the details of horizontal sync pulse.
- (e) Explain in brief various types of screens used in VR headset.

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

- (a) Draw the circuit of three way crossover network. Illustrate distribution of frequencies in respective speakers.
- (b) Explain in brief various performance parameters of wearable antenna.
- (c) State any four CCIR-B standards for colour signal transmission and four CCIR-B standards for reception in TV.
- (d) Give the function performed by camera address setting in CCTV.
- (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) Compare woofer, squawker and Tweeter depending on
- (1) Frequency response
 - (2) Size
 - (3) Cost
 - (4) Application
- (c) (i) Name the block diagram shown in figure 1.
- (ii) Identify the block “A” and “B” in given block diagram.
- (iii) State function of block “A” & “B”.

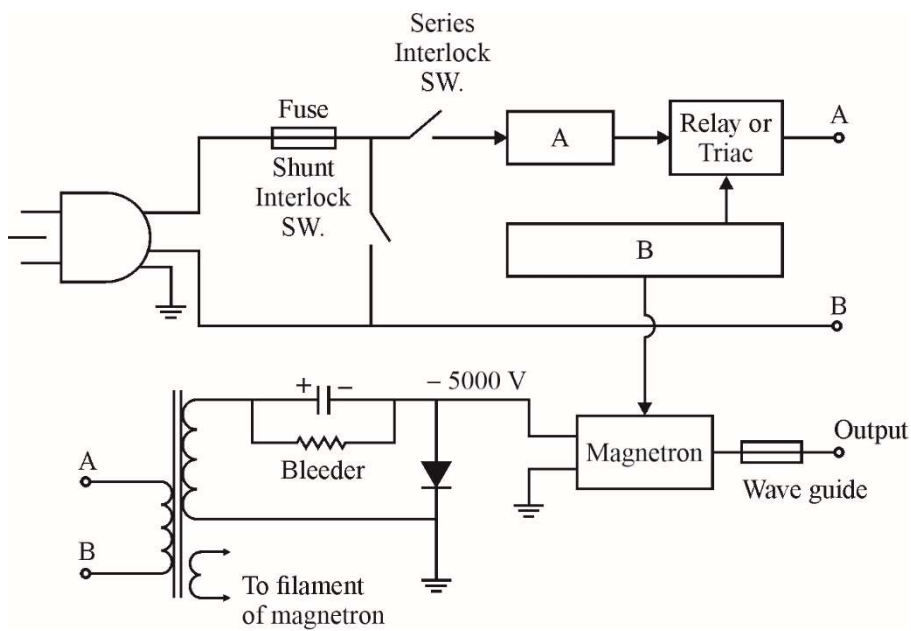


Figure 1

- (d) Explain with the help of block diagram function of Camcoder.
- (e) Describe the working of a Laser Printer.

P.T.O.

6. Attempt any TWO of the following :

2 × 6 = 12

- (a) Distinguish between positive and negative modulation. List any two merits of negative modulation.
 - (b) “Digital camcorders are best for video recording than digital camera.” justify. List four electrical specifications of digital camera.
 - (c) Describe with the help of functional block diagram various controls of LED projector.
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