# 22425

**12526**

**3 Hours / 70 Marks** Seat No. | | | | | | | | |

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

**Marks**

**1. Attempt any FIVE of the following :** **10**

a) i) Name the block diagram given in Figure No. 1

ii) Identify the block "A" and "B" in given Figure No. 1.

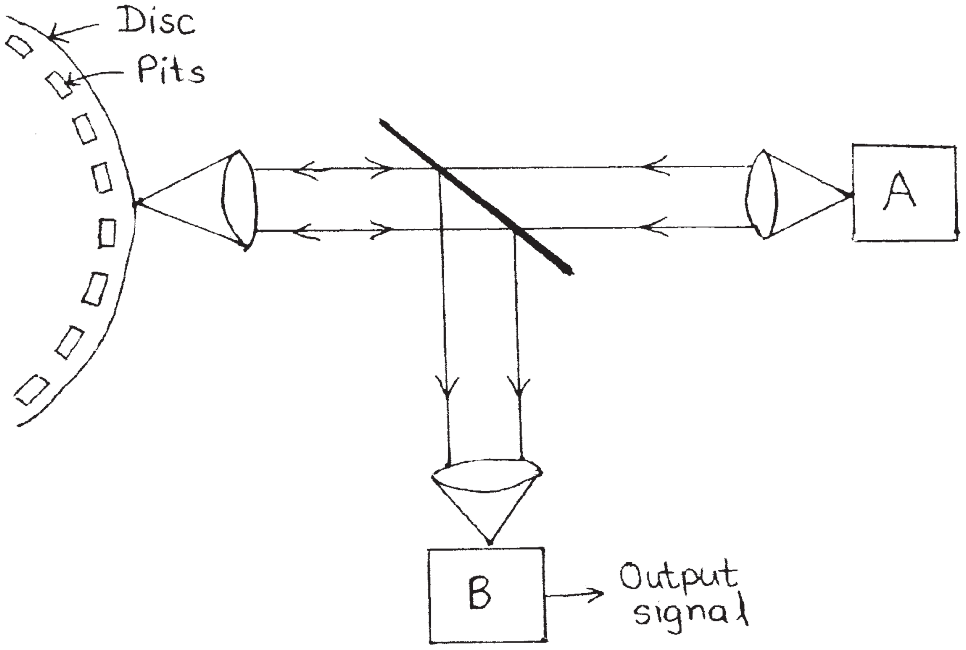


**Fig. No. 1**

P.T.O.

**Marks**

b) State the functions of slide and spindle motor used in CD player.

c) Compare woofer, midrange and tweeter speaker types with respect to –
   i) Frequency range
   ii) Size and physical structure

d) "LED TV is more energy efficient than LCD TV", Justify.

e) List two wiring and safety instructions for use of microwave oven.

f) State working principle of carbon microphone.

g) State two electrical specifications with values for washing machine.

**2. Attempt any THREE of the following : 12**

a) Define following basic characteristics of sound signal –
   i) Loudness
   ii) Selectivity
   iii) Sensitivity
   iv) Fidelity

b) Draw and explain working of MP3 player.

c) Draw block diagram of colour TV transmitter. State principle of PAL encoder.

d) State working principle of LCD TV with appropriate diagram.

**3. Attempt any THREE of the following : 12**

a) Draw the functional block diagram of washing machine. State the type of washing machine.

b) State four electrical specifications with values for microwave oven.

c) Explain NHK MUSE encoding system with temporal and spatial interpolation.

d) List any eight specifications of CCIR-B standards for colour signal transmission and reception.

**4. Attempt any THREE of the following : 12**

a) Define Vertical and Horizontal resolution, Aspect ratio interless scanning.

**Marks**

b) Explain the working of Direct to Home Receiver (DTH) with its indoor and outdoor unit.

c) State working principle of photocopier machine with neat diagram.

d) State operating principle of electrostatic speaker with neat diagram.

e) Draw and explain block diagram of Hi-Fi amplifier system.

**5. Attempt any TWO of the following :** **12**

a) State with suitable diagram the function of each block of OLED TV.

b) i) Name the block diagram shown in Figure No. 2.

ii) Identify the block "A", "B" and "C" in given block diagram shown in Figure No. 2.

iii) State the function of block "A", "B" and "C" in given block diagram shown in Figure No. 2.

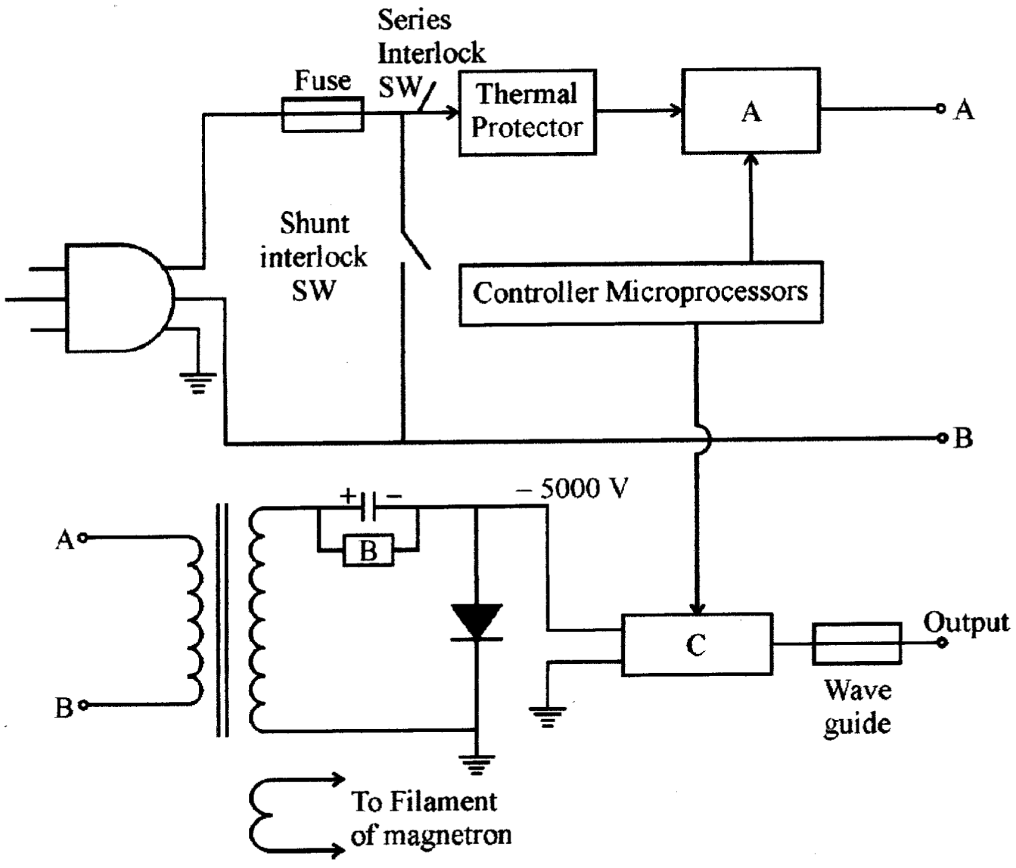


**Fig. No. 2**

P.T.O.

**Marks**

c) i) Draw labelled diagram of Composite Video Signal

ii) Interpret the significance of pedestal height in CVS

**6. Attempt any TWO of the following :** **12**

a) i) Draw sketch for total channel bandwidth using Vestigial Sideband (VSB) Transmission.

ii) Interpret the significance of vestige in VSB.

iii) State merits of VSB transmission with respect to bandwidth and power.

b) i) State operating principle of Digital camcorder with neat block diagram.

ii) Compare CCD and CMOS sensors.

c) Draw and explain block diagram of CD player.

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