

Scheme – I

Sample Question Paper

Program Name : Electronics Engineering Programme Group

Program Code : DE/EJ/ET/EN/EX/EQ

Semester : Fourth

Course Title : Consumer Electronics

Marks : 70

22425

Time: 3 Hrs.

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) Preferably, write the answers in sequential order.

Q.1) Attempt any FIVE of the following

10 Marks

- (a) Identify block "A" given in figure 1, and predict the output signal of block A.

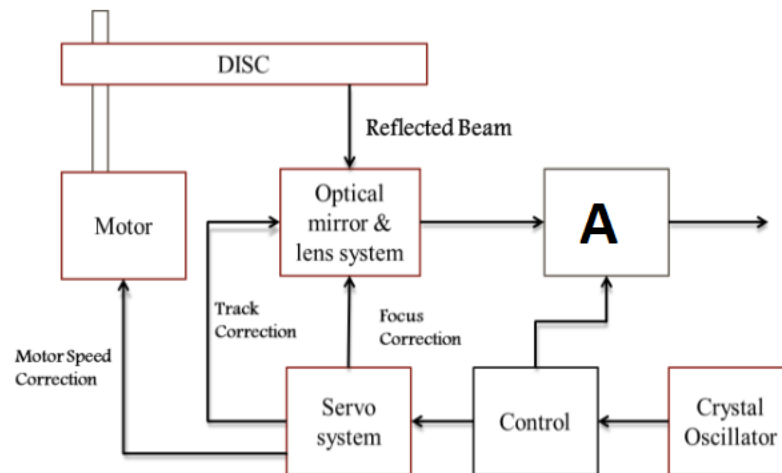


Figure 1

- (b) State 4 Parameters of Public Address System.
- (c) List out four technical specifications of Hi-fi Audio Amplifier system,
- (d) " Back Lit LED TV is better than edge Lit LED TV" Justify.
- (e) List any two wiring and Safety Instructions for use of microwave Oven.
- (f) For Woofer and Tweeter comment on the following factors.
 - i. Frequency Range .
 - ii. Size of Speakers.
- (g) Explain the Function of Exposer in Photocopier Machine.

Q.2) Attempt any THREE of the following: -

12 Marks

- (a) State the function of Equalizer with the block diagram of Hi-fi audio amplifier.
- (b) Identify blocks "A" and "B" given in figure 2, and state its function.

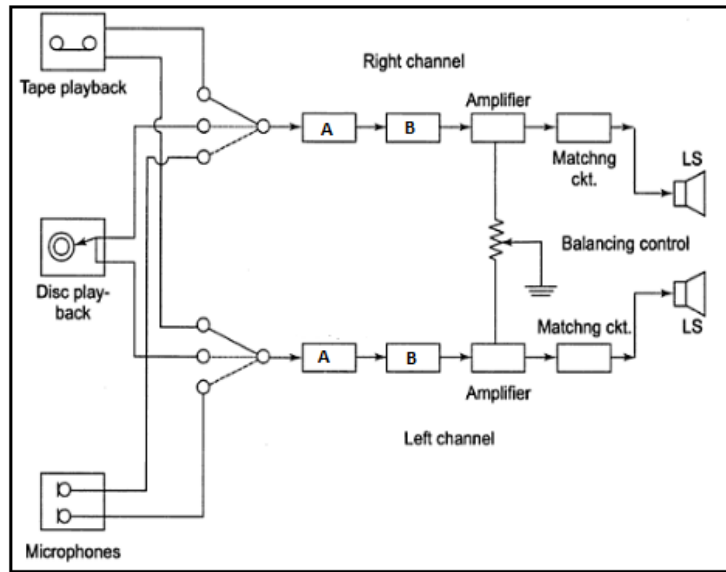


Figure 2

- (c) Define:
 - i. Positive Modulation.
 - ii. Negative Modulation.
- (d) Explain the NHK MUSE encoding system.

Q.3) Attempt any THREE of the following.

12 Marks

- (a) "Digital Camcorders are best for video recording than digital camera" Justify.
- (b) State four Electrical specifications with values for Washing Machine.
- (c) Identify the missing block in given diagram (Figure 3). Describe the working of the this system.

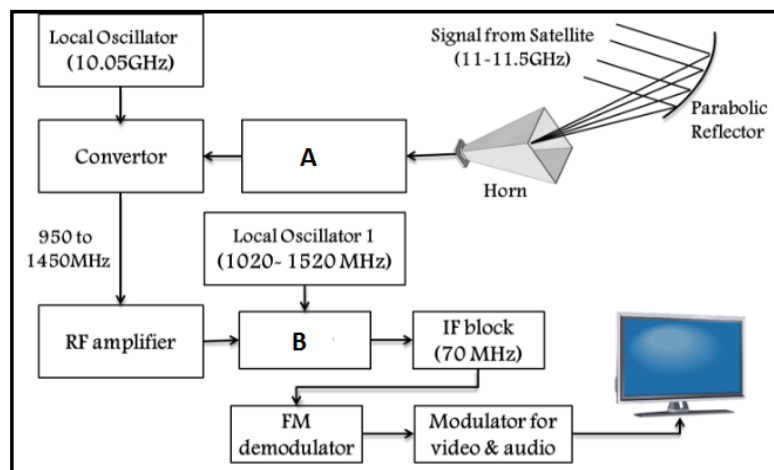


Figure 3

- (d) List any eight specifications of CCIR-B Standards for Color signal transmission and reception.

Q.4) Attempt any THREE of the following. 12 Marks

- (a) Describe with the help of diagram Front porch, Back porch and Line Sync Pulse in Horizontal Sync Pulse.
- (b) Explain with the help of diagram the Function of Sync Separator.
- (c) Explain the working of photocopier with its block diagram.
- (d) Describe with the help of diagram the working principle of carbon type microphone.
- (e) Sketch the block diagram of MP3 Player.

Q.5) Attempt any TWO of the following. 12 Marks

- (a) State with suitable diagram the function of each block of OLED TV.
- (b) Draw the Block diagram of Washing Machine. State and Justify type of Washing machine having more advantages.
- (c) Draw labelled Diagram of Composite Video Signal and state the function of Line Sync Pulse.

Q.6) Attempt any TWO of the following. 12 Marks

- (a) Define Vertical and Horizontal Resolution. Calculate vertical and horizontal resolution for 625 line system.
- (b) i. Name the Block diagram shown in Figure 4.
 ii. Identify the block "A" and "B" in given block diagram,
 iii. State the functions block "A" and "B".

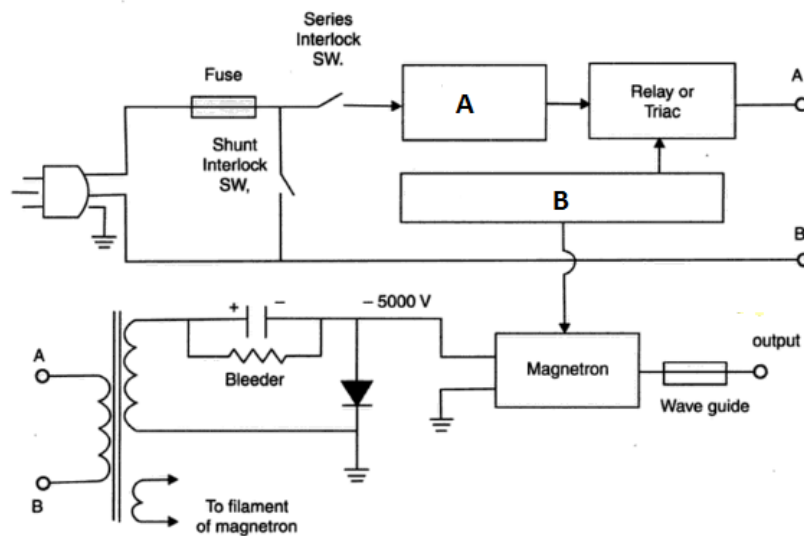


Figure 4

- (c) Describe with the help of block diagram, Operation of CD Player.

Scheme – I

Sample Test Paper - I

Program Name : Electronics Engineering Programme Group
Program Code : DE/EJ/ET/EN/EX/EQ
Semester : Fourth
Course Title : Consumer Electronics
Marks : 20

22425

Time:1 Hour

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) Preferably, write the answers in sequential order.

Q.1 Attempt any FOUR.

08 Marks

- a) Define with respect to Sound System
 - i. Sensitivity
 - ii. Selectivity
- b) List four Types of Microphones used in Sound System.
- c) List types of CD lens used in CD player.
- d) Define with respect to TV System
 - i. Aspect Ratio
 - ii. Image Continuity
- (e) State the functions of drive motors used in CD player.

Q.2 Attempt any THREE.

12 Marks

- (a) Describe with the help of diagram working principle of Electrostatic speaker.
- (b) Explain with the help of diagram the function of each Block of Hi-Fi amplifier.
- (c) Draw the block diagram of CD player.
- (d) Describe with the help of neat diagram Vestigial Side band transmission.

Scheme – I

Sample Test Paper - II

Program Name : Electronics Engineering Programme Group
Program Code : DE/EJ/ET/EN/EX/EQ
Semester : Fourth
Course Title : Consumer Electronics
Marks : 20

22425

Time: 1 Hour

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) Preferably, write the answers in sequential order.

Q.1 Attempt any FOUR.

08 Marks

- (a) "LED TV is more Energy efficient than LCD TV", Justify.
- (b) State time periods of horizontal and vertical sync detail
- (c) Draw the block diagram for separating U and V signal in Colour TV.
- (d) State the types of Washing Machine.
- (e) State the need of equalizing pulses in colour TV.

Q.2 Attempt any THREE.

12 Marks

- a) Describe with the help of block diagram the function of color TV transmitter.
- b) Explain with the help of block diagram the operation of PAL-D decoder.
- c) Describe using suitable diagram the single chip controllers.
- d) Explain with the help of block diagram the construction of LED TV.

22425

12223

3 Hours / 70 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.
- (2) Illustrate your answer 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) List the different components used in CD-player.
- b) Draw the block diagram of PA system (Public address).
- c) List different types of microphones.
- d) Difference between LED and LCD (any two points).
- e) List any two wiring and safety instruction of microoven.
- f) List the types of loudspeakers.
- g) State the electric specification of washing machine.

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) Compare mono amplifier system with stereo amplifier system.
 - b) Draw the block diagram of Hi-fi audio amplifier. State four characteristics of Hi-fi amplifier.
 - c) State Grassman's law. Draw the sketch of additive mixing.
 - d) State any eight CCIR-B standard of colour signal transmitter and receiver.
- 3. Attempt any THREE of the following:** **12**
- a) Explain working of digital cam coder.
 - b) Draw block diagram of washing machine and state types of washing machine.
 - c) Draw the block diagram of PAL-D-decoder.
 - d) Define the following w.r.t. to Television :-
 - i) Contrast
 - ii) Luminance
 - iii) Hue
 - iv) Saturation
- 4. Attempt any THREE of the following:** **12**
- a) Describe vertical resolution and horizontal resolution in brief.
 - b) Draw the block diagram of monochrome TV receiver.
 - c) Explain working of microwave oven with neat block diagram.
 - d) Compare woofer, midrange and tweeter. (any four points.)
 - e) Describe the working of pickup unit of CD player with neat sketch.

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

- a) State with suitable diagram the function of each block of OLED TV.
- b) Explain the picture processing with CCD sensor for DIGICAM.
- c) Draw the composite video signal label each section and define pedestal height and colour burst.

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

- a) Draw block diagram of colour TV transmitter and label it.
 - b) Draw the block diagram of photocopier and explain its principle of working.
 - c) Draw and explain block diagram of CD-player. State the advantages of CD.
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22425

21222

3 Hours / 70 Marks

Seat No.

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15 minutes extra for each hour

- 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.
 - (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (7) 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.
- ii) Identify the block “A” and “B” in given Figure No. 1.

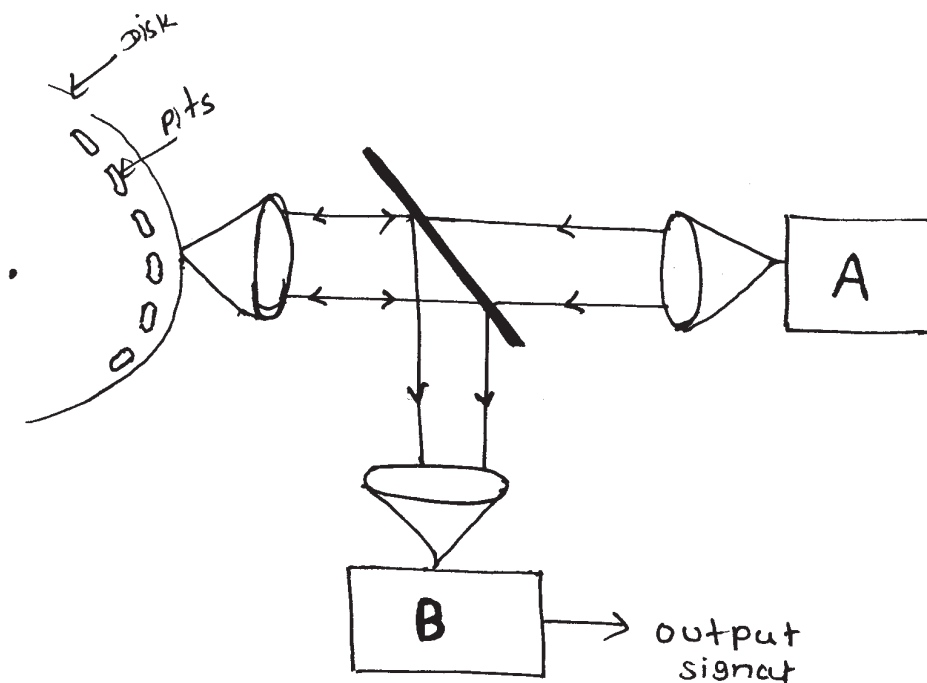


Figure No. 1.

P.T.O.

- b) List various control of Hi-Fi amplifier.
- c) Compare mono amplifier and stereo amplifier. (Any two point)
- d) Draw block diagram of Direct to Home receiver.
- e) State important specification of washing machine. (Any four)
- f) Draw frequency response of woofer, midrange tweeter.
- g) Explain the concept of Bayer's filter.

2. Attempt any THREE of the following: 12

- a) Describe with the help of the diagram the working principle of carbon type microphone.
- b) Draw block diagram of CD player.
- c) Define the following terms
 - i) Contrast
 - ii) Luminance
 - iii) Hue
 - iv) Saturation
- d) Explain interlaced scanning with label diagram.

3. Attempt any THREE of the following: 12

- a) Digital camcorders are best for video recording than digital camera. Justify.
- b) Describe the operation of washing machine and state its types.
- c) Back Lit LED TV is better than edge Lit LED TV. Justify.
- d) State any Eight CCIR-B standard for colour signal transmission and reception.

4. Attempt any THREE of the following: 12

- a) Distinguish between positive and negative modulation.
(Any four)
- b) Explain the NHK MUSE encoding system.
- c) Explain the wiring and safety instruction for a microwave oven.
- d) State and explain characteristics of microphone.
- e) State troubleshooting procedure of audio system.

5. Attempt any TWO of the following: 12

- a) Describe with the help of block diagram the operation of colour TV receiver.
- b)
 - i) Name the block diagram shown in Figure No. 2.
 - ii) Identify the block "A" and "B" in given block diagram.
 - iii) State the functions of block "A" and "B".

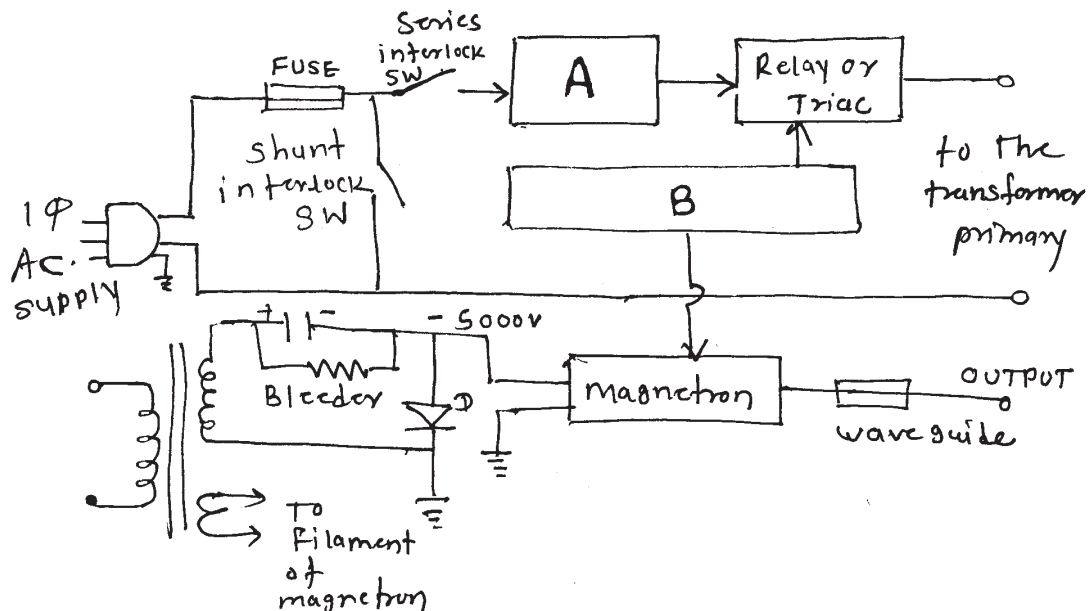


Figure No. 2.

- c) Explain vestigial sideband transmission. State its any two merits and demerits.

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

- a) Draw labelled diagram of composite video signal and state the function of following
 - i) Blanking level
 - ii) Pedestal height
 - b)
 - i) State the important features of CMOS devices.
 - ii) Compare CCD and CMOS sensors.
 - c) Draw and explain working of MP3 player.
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22425

11920

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 :

10

- (a) Define :
 - (i) Fidelity
 - (ii) Selectivity
- (b) Explain impedance matching of PA system.
- (c) Draw block diagram of Hi Fi amplifier.
- (d) Differentiate between positive modulation and negative modulation
- (e) List the advantages of OLED.
- (f) List any two wiring and safety instructions for use of microwave oven.
- (g) What is the use of pick up device in Digital camera ?

- 2. Attempt any THREE of the following : 12**
- (a) Draw the block diagram and explain the working of photocopier.
 - (b) Give the troubleshooting procedure of colour TV receiver system.
 - (c) Describe with the help of diagram the working of crystal type microphone.
 - (d) Explain the working of CD player with block diagram.
- 3. Attempt any THREE of the following : 12**
- (a) Sketch the block diagram of MP3 player.
 - (b) Define following with respect to television :
 - (i) Aspect Ratio
 - (ii) Vertical & Horizontal Resolution
 - (iii) Interlace scanning
 - (iv) Image continuity
 - (c) Explain NHK MUSE encoding system.
 - (d) Explain the block diagram of OLED.
- 4. Attempt any THREE of the following : 12**
- (a) “Digital camcorders are best for video recording than digital camera”. Justify.
 - (b) Differentiate between LCD and LED T.V.
 - (c) Explain the troubleshooting procedure for colour T.V. receiver system.
 - (d) Give CCIR-B standards for colour signal transmission and reception.
 - (e) Explain the troubleshooting procedure of colour T.V. transmitter.

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

- (a) Draw and explain the block diagram of colour T.V. transmitter.
- (b) (i) Explain the working of MP3 player.
(ii) Give troubleshooting procedure for audio systems.
- (c) (i) Explain the working principle of Electrostatic and permanent magnet speaker.
(ii) Compare Woofer and Tweeter. (Any four points)

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

- (a) Draw and explain the block diagram of washing machine. State advantages of automatic washing machine.
 - (b) Explain the working of Direct to Home Receiver (DTH) with its indoor and outdoor unit.
 - (c) Explain the working of microwave oven and give its four electrical specifications.
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21819

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.

- | | Marks |
|---|--------------|
| 1. Attempt any FIVE of the following : | 10 |
| (a) Draw block diagram of CD player. | |
| (b) List the different components used in CD player. | |
| (c) Compare woofer & midrange speaker (any two points). | |
| (d) Describe the function of MUSE system for HDTV. | |
| (e) State any four electrical specifications of microwave oven. | |
| (f) Differentiate between mono and stereo amplifier w.r.t (i) no. of amplifier (ii) applications. | |
| (g) Explain the function of exposor in photocopier machine. | |
| 2. Attempt any THREE of the following : | 12 |
| (a) Describe the operating principle of condenser type of microphone with neat diagram. | |
| (b) Draw and explain the working of MP3 player. | |
| (c) State Grassman's law. Draw the sketch of additive mixing. | |
| (d) State working principle and explain working of LCD TV with appropriate diagram. | |

3. Attempt any THREE of the following : 12

- (a) Explain working of Digital camcorder.
- (b) State four Electrical specifications with values for washing machine.
- (c) Draw the block diagram of PAL-D decoder and write function of each block.
- (d) State any four CCIR-B standard for colour signal transmission and four CCIRB standards for reception in TV.

4. Attempt any THREE of the following : 12

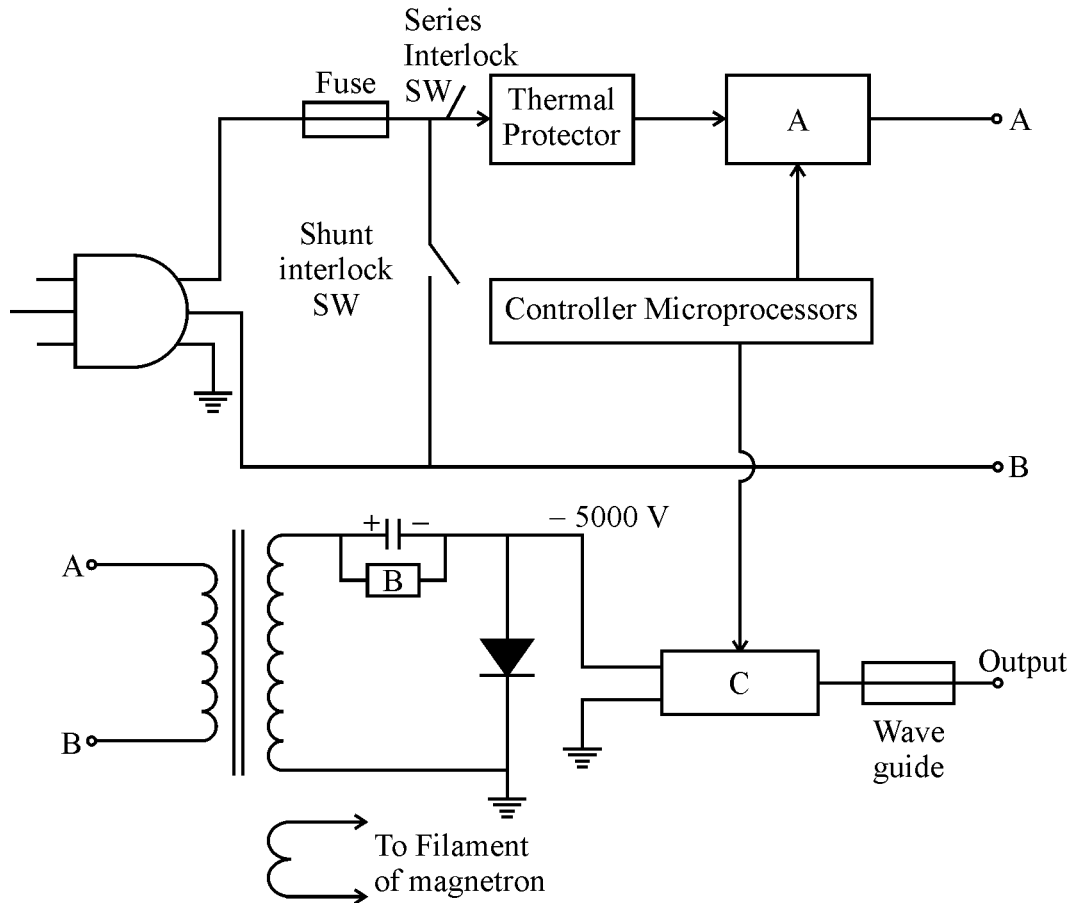
- (a) Explain VSB transmission. State its any four advantages.
- (b) Draw and describe DTH System.
- (c) Describe Troubleshooting procedure of colour TV receiver system.
- (d) Explain any four basic characteristics of sound signal.
- (e) State any four characteristics of Hi-Fi amplifier system.

5. Attempt any TWO of the following : 12

- (a) Explain OLED TV with neat labelled diagram.
- (b) Draw block diagram of washing machine and state types of washing machine.
- (c) Describe why equalising pulses are needed. Draw the vertical synchronising pulse structure.

6. Attempt any TWO of the following :

- (a) Describe vertical and horizontal resolution in brief.
- (b) (i) Name the block diagram shown in fig.1
- (ii) Identify the block “A”, “B” & “C” in given block diagram.
- (iii) State the functions block “A” and “B”.



- (c) Describe the working of pick-up assembly of CD player with the help of neat sketch.

22425

11920

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 :

10

- (a) Define :
 - (i) Fidelity
 - (ii) Selectivity
- (b) Explain impedance matching of PA system.
- (c) Draw block diagram of Hi Fi amplifier.
- (d) Differentiate between positive modulation and negative modulation
- (e) List the advantages of OLED.
- (f) List any two wiring and safety instructions for use of microwave oven.
- (g) What is the use of pick up device in Digital camera ?

- 2. Attempt any THREE of the following : 12**
- (a) Draw the block diagram and explain the working of photocopier.
 - (b) Give the troubleshooting procedure of colour TV receiver system.
 - (c) Describe with the help of diagram the working of crystal type microphone.
 - (d) Explain the working of CD player with block diagram.
- 3. Attempt any THREE of the following : 12**
- (a) Sketch the block diagram of MP3 player.
 - (b) Define following with respect to television :
 - (i) Aspect Ratio
 - (ii) Vertical & Horizontal Resolution
 - (iii) Interlace scanning
 - (iv) Image continuity
 - (c) Explain NHK MUSE encoding system.
 - (d) Explain the block diagram of OLED.
- 4. Attempt any THREE of the following : 12**
- (a) “Digital camcorders are best for video recording than digital camera”. Justify.
 - (b) Differentiate between LCD and LED T.V.
 - (c) Explain the troubleshooting procedure for colour T.V. receiver system.
 - (d) Give CCIR-B standards for colour signal transmission and reception.
 - (e) Explain the troubleshooting procedure of colour T.V. transmitter.

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

- (a) Draw and explain the block diagram of colour T.V. transmitter.
- (b)
 - (i) Explain the working of MP3 player.
 - (ii) Give troubleshooting procedure for audio systems.
- (c)
 - (i) Explain the working principle of Electrostatic and permanent magnet speaker.
 - (ii) Compare Woofer and Tweeter. (Any four points)

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

- (a) Draw and explain the block diagram of washing machine. State advantages of automatic washing machine.
 - (b) Explain the working of Direct to Home Receiver (DTH) with its indoor and outdoor unit.
 - (c) Explain the working of microwave oven and give its four electrical specifications.
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22425

21819

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.

- | | Marks |
|---|--------------|
| 1. Attempt any FIVE of the following : | 10 |
| (a) Draw block diagram of CD player. | |
| (b) List the different components used in CD player. | |
| (c) Compare woofer & midrange speaker (any two points). | |
| (d) Describe the function of MUSE system for HDTV. | |
| (e) State any four electrical specifications of microwave oven. | |
| (f) Differentiate between mono and stereo amplifier w.r.t (i) no. of amplifier (ii) applications. | |
| (g) Explain the function of exposer in photocopier machine. | |
| 2. Attempt any THREE of the following : | 12 |
| (a) Describe the operating principle of condenser type of microphone with neat diagram. | |
| (b) Draw and explain the working of MP3 player. | |
| (c) State Grassman's law. Draw the sketch of additive mixing. | |
| (d) State working principle and explain working of LCD TV with appropriate diagram. | |

3. Attempt any THREE of the following : 12

- (a) Explain working of Digital camcoder.
- (b) State four Electrical specifications with values for washing machine.
- (c) Draw the block diagram of PAL-D decoder and write function of each block.
- (d) State any four CCIR-B standard for colour signal transmission and four CCIRB standards for reception in TV.

4. Attempt any THREE of the following : 12

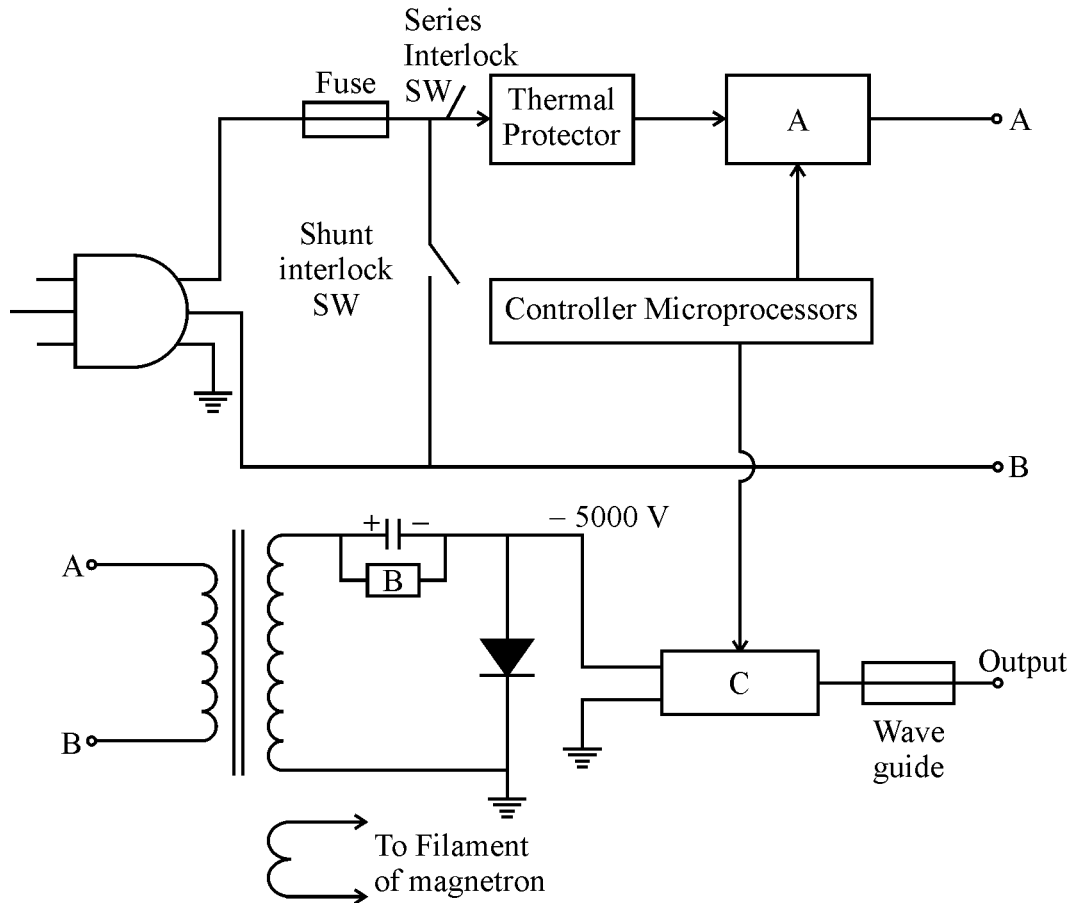
- (a) Explain VSB transmission. State its any four advantages.
- (b) Draw and describe DTH System.
- (c) Describe Troubleshooting procedure of colour TV receiver system.
- (d) Explain any four basic characteristics of sound signal.
- (e) State any four characteristics of Hi-Fi amplifier system.

5. Attempt any TWO of the following : 12

- (a) Explain OLED TV with neat labelled diagram.
- (b) Draw block diagram of washing machine and state types of washing machine.
- (c) Describe why equalising pulses are needed. Draw the vertical synchronising pulse structure.

6. Attempt any TWO of the following :

- (a) Describe vertical and horizontal resolution in brief.
- (b) (i) Name the block diagram shown in fig.1
- (ii) Identify the block “A”, “B” & “C” in given block diagram.
- (iii) State the functions block “A” and “B”.



- (c) Describe the working of pick-up assembly of CD player with the help of neat sketch.



17537

11819

3 Hours / 100 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**.*

Marks

1. A) Attempt **any three** :

12

- a) Draw the cross over network circuit and state its function.
- b) List specifications of cable TV.
- c) Define : i) Aspect ratio ii) Image continuity w.r.t. T.V. system.
- d) State the advantages of vacuum fluorescent.

B) Attempt **any one** :

6

- a) Draw block diagram of colour TV transmitter and mention the function of each block.
- b) State and explain the working principle of LED TV systems. List its advantages.

2. Attempt **any four** :

16

- a) Describe the development of HDTV and its associated system.
- b) Define the following terms :
 - i) Hue
 - ii) Luminance
 - iii) Viewing distance
 - iv) Saturation
- c) Draw the block diagram and explain operation of PAL-D decoder.
- d) List and describe the functions of front panel controls of CD player mechanism.
- e) Draw the basic circuit for the separation of U and V signals and describe its working.
- f) Differentiate between stereo amplifier and mono amplifier.

P.T.O.



3. Attempt **any four** : 16
- a) State and explain the working principle of LNBC.
 - b) Draw the construction and state the operating principle of Yagi-Uda antenna.
 - c) Draw the circuit diagram of graphic analyzer and describe its operation.
 - d) Explain the functions of the following :
 - i) CD pick-up assembly
 - ii) CD gear system.
 - e) State and explain Grassman's law.
4. A) Attempt **any three** : 12
- a) Describe the following w.r.t. composite video signal :
 - i) Pedestal height
 - ii) Blanking pulse
 - b) State the merits and demerits of negative modulation.
 - c) Draw the block diagram of CD player and explain its operation.
 - d) Describe the working of dB meter and state its working principle.
- B) Attempt **any one** : 6
- a) Draw the circuit diagram of RGB drive amplifier and explain it.
 - b) Describe the following terms in TV :
 - i) Horizontal sync pulse details
 - ii) Vertical sync pulse details.
5. Attempt **any two** : 16
- a) Describe the working principle of PIL colour picture tube. State its advantages w.r.t. trinitron picture tube.
 - b) i) Draw the block diagram of DTH system.
ii) Interpret the architecture of cable TV network.
 - c) Draw the block diagram of PAL D type color TV receiver label it well.
6. Attempt **any four** : 16
- a) State CCIR-B standards used for TV system.
 - b) Describe the principle of operation of solid state camera based on CCD.
 - c) Draw the constructional details of dish antenna and state its working principle.
 - d) Compare between woofer, midrange and tweeter.
 - e) Explain the following terms in colour theory w.r.t. TV :
 - i) Primary colours.
 - ii) Secondary colours.
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17537

21718

3 Hours / 100 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) *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. a) Attempt any three :	12
i) Compare mono and stereo amplifier.	4
ii) List the different types of amplifiers used in cable TV system. State the function of each.	4
iii) Define :	
1) Aspect ratio	
2) Horizontal resolution	
3) Hue	
4) Saturation.	4
iv) List different lenses used in CD mechanism. State the function of each.	4
b) Attempt any one :	6
i) Draw block diagram of colour TV transmitter. Write function of each block.	6
ii) Explain EHT generation in colour TV with circuit diagram.	6
2. Attempt any four :	16
a) Describe the principle of LCD with neat diagram.	4
b) Draw and explain composite video signal.	4
c) Explain how U and V signals separated in colour TV system.	4
d) List four advantages of fluorescent display system used in CD player.	4
e) Describe NHK MUSE system for HDTV.	4
f) State necessity of crossover network. Draw and explain three way crossover network.	4

P.T.O.



	Marks
3. Attempt any four :	16
a) Draw and describe block diagram of dB meter.	4
b) Differentiate PAL, NTSC and SECAM system.	4
c) Draw and explain Dolby NR recording system.	4
d) Explain CD detection technique used in CD player with a neat sketch.	4
e) State Grassman's law. Explain additive colour mixing.	4
4. A) Attempt any three :	12
a) Describe interlaced scanning with neat sketch.	4
b) Define positive and negative modulation. State any 2 merits and 2 demerits of negative modulation.	4
c) Draw and explain block diagram of CD player.	4
d) Differentiate between CATV and CCTV (any four points).	4
B) Attempt any one :	6
a) Draw and explain colour killer circuit.	6
b) Explain vestigial sideband transmission used in TV transmitter. Draw its frequency response.	6
5. Attempt any two :	16
a) Describe Precision-In-Line (PIL) and delta gun picture tube with neat sketch.	8
b) Draw and describe block diagram of LNBC. List its any two applications.	8
c) Draw block diagram of colour TV receiver. Write the function of each block.	8
6. Attempt any four :	16
a) State any eight CCIR-B standards for colour signal transmission and reception.	4
b) State principle and explain working of plumbicon camera tube.	4
c) Explain DTH system with block diagram.	4
d) Compare Woofer, Tweeter and Squawker depending upon.	
i) Frequency response	
ii) Crossover network	
iii) Cost	
iv) Application.	4
e) List the frequencies used in TV channel allocation for band I and band III.	4



17537

11718

3 Hours / 100 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**.*
 - (6) *Use of Non-programmable Electronic Pocket Calculator is **permissible**.*
 - (7) *Mobile Phone, Pager and any other Electronic Communication devices are **not** permissible in Examination Hall.*

Marks

1. A) Attempt **any three** : **12**
- a) Compare woofer, mid range, tweeter speaker (any four points).
 - b) Draw constructional details of Dish antenna ? List any four specification of dish antenna.
 - c) Define the following terms :
 - i) Interlace scanning
 - ii) Aspect ratio.
 - d) Draw the block diagram of CD player.
- B) Attempt **any one** : **6**
- a) Draw the block diagram of Color TV Receiver (PAL-D) and label it.
 - b) Draw the EHT generation circuit using transistor and explain the operation of same ckt.
2. Attempt **any four** : **16**
- a) Draw the block diagram of PAL-D decoder system.
 - b) List CCIRB standards for colour signal transmission and reception (any eight).
 - c) Explain working principle of LCDTV.
 - d) List advantages of Vacuum fluorescent.
 - e) Describe NHK and MOSE system for HDTV.
 - f) Draw 5 point ckt diagram for graphic equalizer.

P.T.O.

**Marks**

- 3. Attempt any four :** **16**
- a) Describe the architecture of cable TV network.
 - b) Draw the ckt diagram of Acc amplifier and explain its working principle.
 - c) Define pre-emphasis and de-emphasis.
 - d) Explain the function of front panel controls of CD player.
 - e) List TV channel allocation for band I and band III.
- 4. A) Attempt any three :** **12**
- a) Explain/Define the following terms related to TV :
 - i) Hue
 - ii) Luminance
 - iii) Bandwidth for color signal
 - iv) Saturation.
 - b) Define the term positive modulation. List disadvantages of negative modulation.
 - c) With the help of neat sketch, explain CD pick-up assembly.
 - d) Explain working principle of two-way and three way attenuator/connector required for dish antenna.
- B) Attempt any one :** **6**
- a) Draw the ckt diagram of chroma signal amplifier and explain the same ckt.
 - b) Draw the composite video signal, label each section and define pedestal height and colour burst.
- 5. Attempt any two of the following :** **16**
- a) Describe the construction and working principle of plumbicon camera tube.
 - b) Draw and describe the working of dB meter.
 - c) Draw the block diagram of colour TV transmitter. Describe the function of each block.
- 6. Attempt any four :** **16**
- a) State and explain primary colour and secondary colour Grassman's law for colour theory.
 - b) Draw delta gun picture tube.
 - c) Compare MATV, CATV and CCTV (any 8 points).
 - d) Describe public Address System and Mono amplifier.
 - e) Describe the importance of pre and post equalising pulses.
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17537

16172

3 Hours / 100 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. A) Attempt any three:** **12**
- a) Draw the block diagram of dB meter with neat label.
 - b) Define the following terms :
 - i) Contrast
 - ii) Luminance
 - iii) Hue
 - iv) Saturation.
 - c) Compare stereo amplifier and mono amplifier. (any four points).
 - d) List the different components used in CD player. State their functions.
- B) Attempt any one:** **6**
- a) Draw the block diagram of PAL-D decoder and write function of each block.
 - b) Explain working of camera tube state different types of camera tube.
- 2. Attempt any four:** **16**
- a) Draw the constructional diagram of Yagi Uda Antenna and state the function of each component.
 - b) Draw the three way cross over network also draw its frequency response.
 - c) Draw the block diagram of CD player and explain its working.
 - d) Describe NHK and MUSE system.
 - e) Draw the circuit for EHT generation using diode split technique. Describe its need.
 - f) List the frequencies of TV channel allocation for band I and band III.
- 3. Attempt any four:** **16**
- a) Draw the layout diagram for distribution of cable connection for MATV and describe it.
 - b) Draw the diagram of graphic equalizer and explain it.

P.T.O.



- c) State the requirement of stereo amplifier to be a Hi Fi amplifier (any four).
- d) State the advantages of fluorescent display system.
- e) Distinguish between positive and negative modulation.
- f) Define vestigial side band transmission. State its any two merits and demerits.

4. A) Attempt any three :

12

- i) Draw the block diagram of transmitter and receiver section of remote control for CD player.
- ii) Draw and explain the block diagram of DTH system.
- iii) With neat sketch describe the working of solid state camera based on CCD.
- iv) Describe with neat sketch how interlaced scanning will help to reduce the bandwidth of the video signal.

B) Attempt any one :

6

- i) Describe the need of equalizing pulses. Draw the structure of vertical synchronizing pulse.
- ii) Draw the block diagram of colour TV transmitter.

5. Attempt any two :

16

- a) Draw composite video signal of one line and state the function of following :
 - i) DC level
 - ii) Blanking level
 - iii) Whiter than white
 - iv) Pedestal height.
- b) Draw the block diagram of delta gun colour picture tube and explain its working.
- c) Explain how separation of u and v signal is achieved in colour TV. Draw the circuit of RGB drive amplifier used in colour TV.

6. Attempt any four :

16

- a) Describe multiplexer and attenuator in cable TV with its need.
- b) Describe the working of LNBC with the help of block diagram.
- c) Describe the principle of LCD TV with neat sketch.
- d) With neat sketch describe the working of pick-up unit of a CD player.
- e) Distinguish between CATV and CCTV (any four points).
- f) Draw the block diagram of Hi-Fi amplifier and state the function of controls available on it.



17537

16117

3 Hours / 100 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**.
 - (6) Use of Non-programmable Electronic Pocket Calculator is **permissible**.
 - (7) Mobile Phone, Pager and any other Electronic Communication devices are **not** permissible in Examination Hall.

Marks

1. A) Attempt **any three** :

12

- a) Compare stereo amplifier and mono amplifier. (Any four points).
- b) Why dish antenna is having parabolic shape and meshy surface? List any four specifications of dish antenna.
- c) Define Aspect ratio. Why width of the TV screen is more than height?
- d) List the different lenses used in CD player. State their functions.

B) Attempt **any one** :

6

- a) Describe the working principle and construction of Delta gun picture tube.
- b) Draw the block diagram of PAL-D decoder. Describe the function of each block.

2. Attempt **any four** :

16

- a) Describe how separation of U and V signals is achieved in colour T.V. with the help of suitable circuit diagram.
- b) Draw neat labelled sketch of composite video signal.
- c) Draw the colour killer circuit. Describe its working. Why and where it is used?
- d) Describe the working of pick-up assembly of CD player with the help of neat sketch.
- e) Describe NHK and MOSE system for HDTV.
- f) Draw the circuit of three way cross over network. Illustrate distribution frequencies of respective speakers.

P.T.O.



- 3. Attempt any four :** **16**
- a) Draw and describe DTH system.
 - b) Draw the circuit diagram of RGB drive amplifier and describe its operation.
 - c) Describe operation of Dolby A system of noise reduction.
 - d) List any four advantages of fluorescent display system used in CD player.
 - e) State any eight CCIR-B standard for colour signal transmission and reception in TV.
- 4. A) Attempt any three :** **12**
- a) Describe interlace scanning in brief. How interlace scanning help to reduce bandwidth of video signal ?
 - b) Describe VSB transmission. State its any four advantages.
 - c) Draw neat labelled block diagram of CD player.
 - d) Compare CATV and CCTV (any four points).
- B) Attempt any one :** **6**
- a) Compare NTSC, PAL and SECAM system (any six points).
 - b) Describe why equalising pulses are required. Draw the vertical synchronising pulse structure.
- 5. Attempt any two :** **16**
- a) Describe the construction and working of PIL picture tube.
 - b) Draw the neat block schematic of MATV system. Describe the function of each block.
 - c) Draw the block diagram of colour TV transmitter. Describe the function of each block.
- 6. Attempt any four :** **16**
- a) Compare additive and subtractive colour mixing.
 - b) List the TV channel allocation for band I and band III.
 - c) Describe the working of LNBC with the help of block diagram.
 - d) Describe the functions of following in Hi-Fi amplifier :
 - i) Balance control
 - ii) Loudness control
 - iii) Bass and treble control
 - iv) Quasi stable control.
 - e) Describe vertical resolution and horizontal resolution in brief.
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12190

11122

3 Hours/100 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) **Mobile Phone, Pager and any other electronic communication devices are not permissible in Examination Hall.**
-

MARKS

1. A) Attempt **any three** : **12**
- a) What is Hi-Fi system ? List the characteristics of Hi-Fi amplifier.
 - b) Give the advantages of florescent display system used in CD player.
 - c) Define vertical resolution and horizontal resolution.
 - d) How U and V signal are separate ?
- B) Attempt **any one** : **6**
- a) Explain operation of PAL-D decoder with its block diagram.
 - b) Explain with block diagram, working of monochrome TV receiver.
2. Attempt **any four** : **16**
- a) Explain different controls available on Hi-Fi Amplifier.
 - b) What is negative modulation ? State merits of negative modulation.
 - c) Give the TV channel allocation for band I and band III.
 - d) Give the CCIRB standard for colour TV. (any Eight)
 - e) Draw and explain the block diagram of DTH system.

P.T.O.

3. Attempt **any four** :

- a) What are sync pulses and blanking pulses ? Describe use of these pulses in TV.
- b) Draw the block diagram of dB meter.
- c) Draw and explain the diagram of PIL colour picture tube.
- d) Draw block diagram of CCTV and explain it.
- e) State the principle of pick-up assembly in CD player with diagram.

4. A) Attempt **any two** :

12

- a) Draw the block diagram of MATV and explain function of each block.
- b) Explain principle and working of detection used in CD player.
- c) Draw circuit diagram of three way cross over network and explain its operation in brief.

B) Attempt **any one** :

6

- a) How high voltage is generated by EHT circuit in colour TV receiver ?
- b) Describe construction and working of Plumbicon camera tube.

5. Attempt **any four** :

16

- a) Differentiate between positive and negative modulation.
- b) Draw and explain the block diagram of LNBC.
- c) Give the comparison between NTSC, PAL and SCAM systems.
- d) Draw block diagram of colour TV transmitter.
- e) What are sync pulses and blanking pulses ? Describe uses of these pulses in TV.

6. Attempt **any four** :

16

- a) Compare stereo amplifier with mono amplifier.
 - b) Explain the term (1) Hue (2) Saturation.
 - c) Justify the choice of 625 lines for TV transmission. Why is the total number of lines kept odd in all TV system ?
 - d) Draw block diagram of PAL-D decoder and explain it.
 - e) Give the different components used in CD player and explain any one of it.
-



12190

13141

3 Hours/100 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. A) Attempt **any three** : **(3×4=12)**
 - a) Explain Dolby-NR recording system in brief.
 - b) List four advantages of compact disc.
 - c) What is VSB transmission ? State its merits.
 - d) Explain the working of Yagi-Uda antenna with sketch.

B) Attempt **any one** : **(1×8=8)**

 - a) What is EHT ? Explain its need. Draw the circuit diagram for EHT generation and explain its working.
 - b) Compare positive and negative modulation and list the merits and demerits of negative modulation.
2. Attempt **any four** : **(4×4=16)**
 - a) Explain the function of following in Hi-Fi amplifier :
 - i) Balance control
 - ii) Loudness control
 - iii) Bass and treble control
 - iv) Quasi stable switch.
 - b) Draw and explain the diagram of PIL picture tube.
 - c) What do you understand by vertical and horizontal resolution in TV system ?
 - d) What do you understand by interlaced scanning ? Explain how it will help to reduce the bandwidth of video signal.
 - e) List specification of dish antenna used in cable TV.

P.T.O.



(4×4=16)

3. Attempt **any four** :

- a) Give vertical synch pulse details.
- b) Why dish antenna is parabolic in shape and meshy surface ?
- c) State and explain Grassman's law for subtractive colour mixing.
- d) What is the need of terminating resistance in MATV ?
- e) Explain the function of following in CD mechanism. :
 - 1) Drive motors
 - 2) CD lens.

4. A) Attempt **any two** :

(2×4=8)

- a) Explain block diagram of db meter.
- b) With a neat diagram explain function of CD pick-up assembly.
- c) State and explain the concept of graphic equalizer.

B) Attempt **any one** :

(1×8=8)

- a) Draw the block diagram of PAL-D receiver. Explain how signal is processed in each block.
- b) Draw the block diagram of colour TV transmitter and explain its working in detail.

5. Attempt **any four** :

(4×4=16)

- a) Explain the preference of FM over AM for sound signal transmission in TV.
- b) Explain the need of multiplexer and attenuator in cable TV.
- c) Explain how separation of U and V signals is achieved in colour TV.
- d) Explain the working of solid state camera based on CCD.
- e) Give any four CCIR-B standards for colour TV reception.

6. Attempt **any four** :

(4×4=16)

- a) What is the necessity of cross over network ? Explain with diagram.
 - b) Draw the composite video signal and label all the parts.
 - c) Explain the following terms with respect to colour signal :
 - i) Hue
 - ii) Saturation
 - iii) Luminance.
 - d) Explain principle and working of Delta Gun picture tube.
 - e) Explain the function of CD player with neat block diagram.
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17537

14115

3 Hours / 100 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) Use of 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. a) Attempt any **THREE** of the following: **12**
- (i) State necessity of cross-over network. Draw two way cross over net work and explain its working.
- (ii) Draw neat sketch of Dish antenna and list any four specifications of Dish antenna.
- (iii) Define the following terms with respect to TV system.
- 1) Hue
 - 2) Saturation
 - 3) Chrominance signal
 - 4) Brightness
- (iv) List the types of drive motors used in TV system.

P.T.O.

- b) **Attempt any ONE of the following:** **6**
- (i) Why negative modulation is used in TV system instead of positive modulation. Justify your answer with respect to following points:
- 1) Effect of noise of picture signal
 - 2) Effect of noise on synchronization
 - 3) Peak power available
- (ii) Draw circuit diagram of RGB drive amplifier and explain its working.
- 2. Attempt any FOUR of the following:** **16**
- a) State working principle and working of LCD TV with appropriate diagram.
 - b) Compare additive colour mixing with subtractive colour mixing with respect to any four points.
 - c) Draw sketch showing constructional details of yagi-uda antenna.
 - d) Explain data detection technique used in CD player with the help of neat sketch.
 - e) Describe NHK MUSK system for HDTV.
 - f) Compare Mono amplifier system with stereo amplifier system.
- 3. Attempt any FOUR of the following:** **16**
- a) Draw block diagram of DTH system and explain its operation.
 - b) With the help of suitable diagram, explain how U and V signals are separated in colour TV.
 - c) Draw block diagram of Hi-fi audio amplifier. State any four characteristics of Hi-fi system.
 - d) List any four advantages of fluroscent display system used in CD player.
 - e) State any eight CCIR-B standards for colour signal transmission and reception.

4. a) **Attempt any THREE of the following:** **12**
- (i) What is meant by flicker? How flicker is eliminated by interlaced scanning? Explain.
 - (ii) State principle and explain working of Delta gun picture tube with the help of neat sketch.
 - (iii) Draw block diagram of CD player.
 - (iv) Draw typical cable TV network plan and state the function of different types of amplifiers used in cable TV system.
- b) **Attempt any ONE of the following:** **6**
- (i) Draw circuit diagram showing how EHT supply is generated from line output stage in colour TV.
 - (ii) Draw composite video signal showing all details and explain the following terms:
 - 1) DC level
 - 2) Blanking level
 - 3) Whiter than white level
 - 4) Pedestal height
5. **Attempt any TWO of the following:** **16**
- a) Draw block diagram of PAL-D-Decoder and explain its working in detail.
 - b) State importance of LNBC. Draw block diagram of LNBC and explain its working in detail.
 - c) Draw block diagram of colour TV transmitter (Encoder) and explain its working in detail.

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

- a) Define the term resolution with respect to TV. system. Explain the term horizontal resolution and vertical resolution in detail.
 - b) State principle and explain working of Vidicon camera tube with the help of neat sketch.
 - c) Draw block diagram of closed circuit TV (CCTV) system and explain function of each block.
 - d) Compare following types of loud speakers with respect to any four points. (as frequency range, size, sketch, application, their frequency response etc.)
 - e) State TV channel allocation for Band I and Band III.
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17537

21415

3 Hours/100 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.**
(6) **Use of non-programmable Electronic Pocket Calculator is permissible.**
(7) **Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.**

MARKS

1. A) Attempt **any three** : 12
- a) Compare between woofer, tweeter and squawker on the basis of following parameters.
- i) Frequency response ii) Cross over network
iii) Cost iv) Application.
- b) Draw the block diagram of dB meter with neat label.
- c) Define the following terms :
- i) Contrast ii) Luminance
iii) Hue iv) Saturation.
- d) State any four advantages of vacuum fluorescent display.
1. B) Attempt **any one** : 6
- a) Draw the block diagram of Colour TV transmitter and write the function of each block.
- b) What is EHT ? Describe its need. Draw the circuit diagram for EHT generation using diode split addition technique.
2. Attempt **any four** : 16
- a) Describe the principle of LCD with neat sketch.
- b) List the frequencies of TV channel allocation for band I and band III.
- c) Describe NHK and MUSE system.
- d) Describe the working of pick-up unit of a CD player with neat sketch.
- e) Draw the block diagram of PAL-D decoder.
- f) State the requirement of stereo amplifier to becomes Hi-Fi amplifier (any four).

P.T.O.



3. Attempt **any four** : 16
- a) Draw the layout diagram for distribution of cable connection for MATV and describe it.
 - b) Differentiate NTSC with PAL with respect to types of chrominance modulation, line frequency, field frequency and used in which countries.
 - c) Draw and describe the block diagram of Hi-Fi amplifier.
 - d) Describe the block diagram of CD player with neat block diagram.
 - e) Define vestigial sideband transmission. State its any two merits and demerits.
4. A) Attempt **any three** : 12
- a) Describe with neat sketch how interlaced scanning will help to reduce the bandwidth of the video signal.
 - b) List any two merits and demerits of negative modulation.
 - c) State the function of tray motor and slide (feed) motor.
 - d) Draw the Yagi-Uda antenna and its radiation pattern. Explain its working.
4. B) Attempt **any one** : 6
- a) Draw the circuit diagram of RGB drive amplifier used in colour TV. Explain the function of each component used in it.
 - b) Describe why equalizing pulses are required. Draw the vertical synchronizing pulse structure.
5. Attempt **any two** : 16
- a) Draw the block diagram of Colour TV receiver. How signal is processed in each block ?
 - b) Draw and describe the block diagram of LNBC. List its any two application.
 - c) Describe the Principle of (PIL) precision in line and delta gun picture tube with neat sketch.
6. Attempt **any four** : 16
- a) State Grassman's law. Draw the sketch of additive mixing.
 - b) Why Amplitude Modulation (AM) is preferred for picture signal and FM is preferred for sound signal in TV system ?
 - c) Describe the need of multiplexer and attenuator in cable TV.
 - d) Compare mono amplifier and stereo amplifier.
 - e) Draw composite video signal with label.
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17537

15116

3 Hours / 100 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) *Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.*

- | | Marks |
|--|--------------|
| 1. A) Attempt any three: | 12 |
| a) Differentiate between stereo amplifier and mono amplifier (4 points). | |
| b) Draw LNBC unit in the dish antenna. | |
| c) State the CCIR-B standard for colour TV signal transmission and reception (any eight). | |
| d) State any four advantages of fluorescent display system. | |
| B) Attempt any one: | 6 |
| a) What is working principle of TV camera tube ? State different types of camera tube and explain any one. | |
| b) Draw and explain the block diagram of PAL-D decoder. | |
| 2. Attempt any four: | 16 |
| a) State working principle of LCDTV with neat diagram. | |
| b) Explain the details of horizontal sync pulse. | |
| c) Explain how U and V signals are separated in colour TV system. | |
| d) Enlist the different types of CD lens used in CD player. Explain any one. | |
| e) Describe NHK MUSE system for HDTV. | |
| f) Draw the three way cross over n/w with its frequency response graph. | |
| 3. Attempt any four: | 16 |
| a) Explain use of multiplexer in cable TV. | |
| b) Draw and explain working of RGB drive amplifier in colour TV. | |
| c) Draw the block diagram of Hi – Ri amplifier and explain it in detail. | |

P.T.O.



- d) Draw the block diagram of CD player. Explain how cross are corrected in ERCO block.
- e) Give frequency range in TV channel allocation for band I and band III.
- f) What is graphic equalizer ? Write its necessity.

4. A) Attempt any three :

12

- a) Explain interface scanning in TV system with neat sketch.
- b) State merits and demerits of negative modulation.
- c) Draw and explain CD pick up assembly in CD player.
- d) Draw and explain the block diagram of DTH system.

B) Attempt any one :

6

- a) What is the need of EHT ? Explain how it is generated.
- b) Draw composite video signal of one line and label it showing.
 - i) DC level
 - ii) Blanking level
 - iii) Whiter than white level
 - iv) Pedestal height and explain it.

5. Attempt any two :

16

- a) Draw the block diagram of colour TV receiver (PALD type). Explain how signal is processed in each block.
- b) Draw the layout diagram for MATV and explain it in detail.
- c) Draw the block diagram of colour TV transmitter and explain the function of each block.

6. Attempt any four :

16

- a) Define the terms :
 - i) Aspect ratio
 - ii) Image continuity
 - iii) Saturation
 - iv) Hue.
- b) Explain PIL picture tube in detail.
- c) Draw the block diagram of dBmeter and explain its working principle.
- d) List various control of Hi-Fi amplifier and explain any one.
- e) State Grassman's law and explain additive colour mixing.



17537

15162

3 Hours / 100 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) *Mobile Phone, Pager and any other Electronic Communication devices are **not** permissible in Examination Hall.*

Marks

1. a) Attempt **any three** of the following : **12**
- i) Define audio amplifier. State its type. Draw its frequency response curve.
 - ii) State the advantages of fluorescent display system (any four).
 - iii) Define the following terms :
 - i) Aspect ratio
 - ii) Scanning
 - iii) Image continuity
 - iv) Pixels.
 - iv) List any eight specifications of dish antenna.
- b) Attempt **any one** of the following : **6**
- i) Draw block diagram of colour TV transmitter and label it.
 - ii) Describe how separation of U and V signals are achieved in colour TV with the help of neat sketch (diagram).
2. Attempt **any four** of the following : **16**
- a) Draw and describe Yagi - Uda antenna with neat sketch and its radiation pattern.
 - b) Draw composite video signal and label its various parts.
 - c) Describe NHK, MUSK system for HDTV.
 - d) Draw the block diagram of CD player.
 - e) State working principle of LCD TV with appropriate diagram.
 - f) Draw basic cross over network and draw its response curve.

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- 3. Attempt any four of the following :** **16**
- a) Draw the block diagram of dB meter and describe its working principle.
 - b) Draw and describe the circuit diagram for generating EHT.
 - c) Compare Woofer, Squawker and Tweeter with respect to definition, size, weight and frequency range.
 - d) State the functions of various drive motors in CD player.
 - e) Draw with label the details of horizontal sync pulse.
- 4. a) Attempt any three of the following :** **12**
- i) Compare between additive colour mixing and subtractive colour mixing with respect to working principle, sketch, application and primaries used.
 - ii) Draw and describe the working of vidicon camera tube.
 - iii) With the help of neat sketch, describe working of 'pick up unit' of a CD player .
 - iv) Draw the layout diagram for distribution of cable connection for MATV and describe it.
- b) Attempt any one of the following :** **6**
- i) Draw the block diagram of PAL-D decoder. Describe the function of each block.
 - ii) State TV channel allocation for band I and band III.
- 5. Attempt any two of the following :** **16**
- a) Compare between positive and negative modulation (any four points).
 - b) What is CCTV ? State its use. Compare CCTV with MATV (any four points).
 - c) Draw and describe the principle of delta gun tube and precision in line (PIL) picture tube.
- 6. Attempt any four of the following :** **16**
- a) State the need for pre-equalising and post equalising pulses in composite video signal.
 - b) Draw the block diagram of colour TV receiver.
 - c) State the need of multiplexer and attenuator in cable TV.
 - d) Draw and describe the block diagram of Hi-Fi amplifier.
 - e) State any eight CCIR-B standard for colour signal transmission and reception.
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