

CBCS SCHEME

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BEC/BTE/BVL654B

Sixth Semester B.E./B.Tech. Degree Examination, June/July 2026

Consumer Electronics



Time: 3 hrs

Max. Marks: 100

Note: I. Answer any FIVE full questions, choosing ONE full question from each module.

II M: Marks, L: Bloom's level, C: Course outcomes.

Module – 1			M	L	C
Q.1	a.	With a neat diagram explain the principle, construction and working of moving coil microphone. And also list the features of it.	08	L2	CO1
	b.	Describe the following qualities of microphone. i) Frequency response ii) Output impedance iii) Distortion	06	L2	CO1
	c.	A Plates of condenser microphone have a diameter of 12 cm. the separation between the plates, varies from 0.0025 cm to 0.005 cm depending on sound pressure. Find the capacitance for the two positions.	06	L3	CO1
OR					
Q.2	a.	With neat diagram explain the principle, construction and working of moving coil loudspeaker. Also list the advantages and disadvantages of it.	08	L2	CO1
	b.	With neat diagram discuss the working of Horn loud speaker.	06	L2	CO1
	c.	A cone type loudspeaker has an efficiency of 7%. The resistance of voice coil is 15 Ω . If an output of 5 W equivalent sound is required, find the voltage input to voice coil.	06	L3	CO1
Module – 2					
Q.3	a.	Illustrate and explain, with neat block diagram, the process of storing audio information on a compact Disc, highlighting how each component functions in the encoding system.	08	L3	CO2
	b.	Describe Encoding Process and any three error correction techniques used in digital audio storage.	08	L2	CO2
	c.	List the precautions to be taken while handling a compact disc.	04	L2	CO2
1 of 3					

OR

Q.4	a.	Illustrate and explain the CD playback process using a labeled diagram, including the role of pick-up system in reading digital data.	10	L2	CO2
	b.	With neat circuit diagram explain the process of D/A converter.	06	L2	CO2
	c.	List the advantages and disadvantages of CD.	04	L2	CO2

Module – 3

Q.5	a.	Differentiate between primary and secondary colors and explain the process of additive and subtractive mixing.	08	L2	CO3
	b.	With neat block diagram discuss the generation of Y, (R-Y) and (B-Y) color signals.	06	L2	CO3
	c.	Find the resistances of the resistance matrix to generate luminance signal as shown in Fig.5(c). Take resistance $R_c = 20K\Omega$. Assume V_R , V_G , and V_B each equal to 1V.	06	L3	CO3

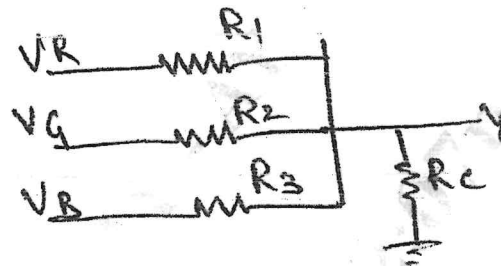


Fig.5(c)

OR

Q.6	a.	With neat block diagram explain the working of digital television.	08	L2	CO3
	b.	Discuss the recent advances in TV technology.	06	L2	CO3
	c.	Find the peak value of C-signal if: i) Saturated Yellow is added to luminance signal ii) Saturated Blue is added to luminance signal. Also find the resultant signal in each case.	06	L3	CO3

Module – 4

Q.7	a.	Differentiate between Video Monitor and Television Receiver.	06	L2	CO4
	b.	Apply your understanding of CCTV systems to illustrate its block diagram and explain how a single surveillance camera can be connected to multiple Video Monitors.	08	L2	CO4
	c.	With neat block diagram describe the function of Cable Television Network.	06	L2	CO4

OR

Q.8	a.	Explain the working principle of a digital watch with detailed block diagram and describe the structure of a 7-segment display with a labeled diagram.	10	L2	CO4
	b.	Analyze the architecture of a digital calculator and explain how its individual components interact during a sample arithmetic operation.	10	L2	CO5

Module – 5

Q.9	a.	Describe the basic working of a cellular telephone and explain the main components of GSM architecture with their functions.	10	L2	CO5
	b.	Explain the concept and working principle of a TV remote control system. Illustrate the basic block diagram and describe the function of each block.	06	L2	CO5
	c.	With neat block diagram explain the working of Inverter.	04	L2	CO5

OR					
Q.10	a.	Apply your understanding of fax communication to describe how a document is transmitted using a fax machine. Support your explanation with labeled block diagram.	08	L3	CO5
	b.	With neat block diagram explain the organization of digital computer.	06	L2	CO5
	c.	Discuss the recent advances in consumer electronics.	06	L2	CO5
