Guru Nanak Dev Engineering College, Ludhiana

Department of Electronics and Communication Engineering

Program	Open Elective	**Semester**	6
Subject Code	OEEC-103	**Subject Title**	Consumer Electronics
Mid Semester Test (MST) No.	2	**Course Coordinator(s)**	Shivmanmeet Singh
Max. Marks	24	**Time Duration**	1 hour 30 minutes
Date of MST	14.5.25	**Roll Number**	

Note: Attempt all questions

Q. No.	Question	COs, RBT level	Marks
Q1	Define electronics ignition and ABS system.	CO5, L1	2
Q2	Build the circuit diagram of digital clock as an application of consumer electronics.	CO5, L6	2
Q3	Classify instrumental panel displays.	CO5, L2	4
Q4	Explain the working of microwave oven with safety instructions.	CO5, L3	4
Q5	Discuss product safety and liability issues.	CO5, L6	4
Q6	Explain in details about refrigeration systems and their components using suitable diagram.	CO5, L5	8

Course Outcomes (CO)

Students will be able to

1	Identify various types of analog and digital signals
2	Troubleshoot audio systems
3	Analyse the composite signal used in various power supplies and video systems
4	Identify & troubleshoot colour TV receivers
5	Maintain compliance with various electronic appliances
6	Troubleshoot different types of microphones

RBT Classification	**Lower Order Thinking Levels (LOTS)**			**Higher Order Thinking Levels (HOTS)**		
RBT Level Number	L1	L2	L3	L4	L5	L6
RBT Level Name	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating

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Max. Marks	24	**Time Duration**	1 hour 30 minutes
Date of MST	18.3.25	**Roll Number**	

Note: Attempt all questions

Q. No.	Question	COs, RBT level	Marks
Q1	Explain the basic principle of dynamic microphone and its significance in audio technology.	CO2, L1	2
Q2	Create visual representation that effectively illustrates the color tv systems and standards.	C03, L6	2
Q3	Evaluate the advantages and disadvantages of using moving iron headphones in various applications. Provide examples to illustrate your points.	CO2, L2	4
Q4	Explain three common issues in audio with video systems and outline troubleshooting methodologies specific to each issue.	CO3, L3	4
Q5	Compare and contrast color picture tube with monochrome.	CO1, L6	4
Q6	Evaluate the concept of stabilizer and its role in ensuring a power supply. Critically analyze two distinct types of power supplies and assess their effectiveness in preserving power.	CO1, L3	8

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Please check that this question paper contains 9 questions and 2 printed pages within first ten minutes.

[Total No. of Questions: 09]

[Total No. of Pages: 02]

Uni. Roll No. 2205472.....

Program: B.Tech. (Batch 2018 onward)
Semester: 6th
Name of Subject: **Consumer Electronics**
Subject Code: **OEEC-103**
Paper ID: **17549**

Time Allowed: 3 Hours

Max. Marks: 60

NOTE:

1) Part A and B are compulsory
2) Part C has Two Questions Q8 and Q9. Both are compulsory, but with internal choice.
3) Any missing data may be assumed appropriately

Part – A

[Marks: 02 each]

Q1.

a) Contrast crystal and dynamic microphone.
b) Outline the working of hearing aids.
c) Create graphically the V-I characteristics of zener diode.
d) List the attributes of colour in colour TV.
e) What are the advantages of microwaves heating over conventional electrical heating systems?
f) Construct ESD protection system using one of electronic device and outline its working.

Part – B

[Marks: 04 each]

Q2. What are the hearing impairments? Illustrate the pre-emphasis and de-emphasis process through suitable diagrams.

Q3. Construct the circuit diagram of Transistor Shunt Voltage Regulator and elaborate its working principle.

Q4. Discuss the procedure to develop chrominance signal through example and suitable diagram.

Q5. Contrast colour picture tube with monochrome picture tube. Discuss the basic arrangement of a colour television receiver using proper block diagram.

P.T.O.

Q6. Construct and elaborate partial driver circuit for seven-segment readout used in calculator.

Q7. Summarize the standards pertaining to electrical safety and fire hazards for safety of product.

Part – C **[Marks: 12 each]**

Q8. What is significance of antilock braking system in motor vehicle? Elaborate dashboard computer system with the help of block diagram.

OR

Define air conditioning and refrigeration? Explain the refrigeration system with the help of schematic flow diagram.

Q9. Construct the schematic diagram of no breaks UPS and discuss its operation. Assess its benefits over short-break UPS.

OR

Formulate guidelines for troubleshooting in audio and video systems.

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