RAAK

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

VALUE ADDED COURSES 2020-2021

Department of Electronics and communication Engineering

20ECE01- High speed system design

MARK SHEET

Sl. No	Register Number	Student Name	Mark
1	17TC2204	ANITHA R	88
2	17TC2205	DEEPA M	96
3	17TC2206	DEEPIKA M	92
4	17TC2207	DEIVAYANAI V	92
5	17TC2208	IYYAPPAN K	96
6	17TC2209	KALAIYARASI G	96
7	17TC2210	KEERTHANA K	84
8	17TC2211	KEERTHANA K	96
9	17TC2213	NILAVARASI R	88
10	17TC2212	MUTHULAKSHMI N	88
11	17TC2215	NITHIYAKUMARI J	88

HOD

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Puducherry - 605 110

PRINCIPAL

VALUE ADDED COURSE
2020-2021

Department of Electronics and communication Engineering

20ECE01-High speed system design

NAME:

CLASS:

DATE:

1. What is the primary concern in high-speed system design?
   A) Cost
   B) Signal Integrity
   C) Size
   D) Weight
   Answer: B) Signal Integrity

2. Which phenomenon causes a signal to reflect back towards the source in high-speed circuits?
   A) Crosstalk
   B) Reflection
   C) Noise
   D) Attenuation
   Answer: B) Reflection

3. What is the main purpose of using differential signaling in high-speed systems?
   A) To increase power consumption
   B) To reduce electromagnetic interference (EMI)
   C) To reduce cost
   D) To increase size
   Answer: B) To reduce electromagnetic interference (EMI)

4. What does PCB stand for in high-speed design?

   A) Printed Circuit Board
   B)Primary Circuit Board
   C)Permanent Circuit Board
   D)Power Circuit Board
   Answer: A) Printed Circuit Board

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5. Which type of material is commonly used for high-speed PCB design to reduce signal loss?
   A) FR-4
   B) Paper-based phenolic
   C) Metal-core
   D) Glass-epoxy
   Answer: A) FR-4

6. What is the primary function of a decoupling capacitor in a high-speed circuit?
   A) To filter high-frequency noise
   B) To store data
   C) To increase voltage
   D) To connect different circuit components
   Answer: A) To filter high-frequency noise

7. Which parameter is crucial for maintaining signal integrity in high-speed PCB traces?
   A) Trace width
   B) Trace length
   C) Trace impedance
   D) Trace material
   Answer: C) Trace impedance

8. What is the effect of crosstalk in high-speed circuits?
   A) Enhanced signal clarity
   B) Signal interference between adjacent traces
   C) Reduced power consumption
   D) Increased signal speed
   Answer: B) Signal interference between adjacent traces

9. Which tool is used to simulate signal integrity in high-speed designs?
   A) SPICE
   B) AutoCAD
   C) MATLAB
   D) PSPICE
   Answer: D) PSPICE

10. What is the impact of via stubs on high-speed signals?
   A)Improved signal clarity
   B)Reflection and signal degradation
   C)Reduced noise
   D)Increased signal speed
   Answer: B) Reflection and signal degradation

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11. What is the purpose of an eye diagram in high-speed system design?
A) To measure physical dimensions
B) To visualize signal integrity
C) To design power supplies
D) To layout PCB traces
Answer: B) To visualize signal integrity

12. In high-speed systems, what is the main cause of jitter?
A) Power fluctuations
B) Variations in signal timing
C) Electromagnetic interference
D) Temperature changes
Answer: B) Variations in signal timing

13. What is the main advantage of using low-voltage differential signaling (LVDS)?
A)Higher power consumption
B)Higher data rates with reduced noise
C)Larger PCB area
D)Simpler design
Answer: B) Higher data rates with reduced noise

14. Which factor is most critical for the placement of components in high-speed PCB design?
A) Component size
B)Component color
C) Signal path length
D)Component weight
Answer: C) Signal path length

15.. What is the role of termination resistors in high-speed circuits?
A) To increase signal power
B) To reduce signal reflections
C) To store energy
D) To amplify signals
Answer: B) To reduce signal reflections

16. What is the typical impedance of a high-speed differential pair?
A) 25 ohms
B) 50 ohms
C) 75 ohms
D) 100 ohms
Answer: D) 100 ohms

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17. Which simulation tool is commonly used for electromagnetic field analysis in high-speed designs?
    A) HFSS
    B) Simulink
    C) AutoCAD
    D) SolidWorks
    Answer: A) HFSS

18. What is the primary reason for using ground planes in high-speed PCB design?
    A) To reduce cost
    B) To provide mechanical support
    C) To minimize EMI and provide a return path for signals
    D) To increase the thickness of the PCB
    Answer: C) To minimize EMI and provide a return path for signals

19. What does the term "skew" refer to in high-speed signal transmission?
    A) The alignment of signal edges
    B) The angle of PCB traces
    C) The length of signal traces
    D) The voltage level of signals
    Answer: A) The alignment of signal edges

20. What is the typical dielectric constant (Dk) range for high-speed PCB materials?
    A) 1-2
    B) 2-4
    C) 4-6
    D) 6-8
    Answer: B) 2-4

21. Which type of analysis is essential for ensuring that power delivery networks (PDNs) are robust in high-speed designs?
    A) Thermal analysis
    B) Mechanical analysis
    C) Power integrity analysis
    D) Signal integrity analysis
    Answer: C) Power integrity analysis

22. Which layout strategy helps minimize crosstalk in high-speed PCB designs?
    A) Routing traces close together
    B) Increasing the distance between parallel traces
    C) Using thinner PCB materials
    D) Increasing the number of vias
    Answer: B) Increasing the distance between parallel traces

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23. What is the effect of increasing the trace width in a high-speed PCB?
    A) Increased signal speed
    B) Decreased signal integrity
    C) Reduced resistance and inductance
    D) Increased power consumption
    Answer: C) Reduced resistance and inductance

24. Which phenomenon is described as the unintentional transfer of energy between two or more signal paths?
    A) Reflection
    B) Crosstalk
    C) Attenuation
    D) Jitter
    Answer: B) Crosstalk

25. What does "EMI" stand for in the context of high-speed systems?
    A) Electromagnetic Interference
    B) Electrical Mechanical Integration
    C) Electronic Module Interconnect
    D) Energy Management Interface
    Answer: A) Electromagnetic Interference

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VALUE ADDED COURSE
2020-2021

Department of Electronics and communication Engineering

20ECE01-High speed system design

NAME: DEEPIKA.M
CLASS: IV/ECE
DATE: 20/08/2020

1. What is the primary concern in high-speed system design?
   A) Cost
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   C) Size
   D) Weight

23/25 ★ 92%

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Certificate of Completion

2020-2021

This is to certify that Mr/Ms .....ANITHA.....R.....

Year...IV..... Department...ECE..... has successfully Completed the Value added course.

COURSE TITLE: HIGH SPEED SYSTEM DESIGN. SCORE: .....88.....

COURSE DURATION: ....9/8/20...to...13/8/2020.....

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VALUE ADDED COURSES

2020-2021

Department of Electronics Communication Engineering

20ECE02- Pattern recognition

MARK SHEET

Sl. No	Register Number	Student Name	Marks
1	18TC1201	ABITHA V	88
2	18TC1202	AGALYA B	96
3	18TC1203	ANITHA N	92
4	18TC1204	FOUSIA BEGAM Y	92
5	18TC1205	JOTHILAKSHMI A	96
6	18TC1206	KAMARUNISHA H	96
7	18TC1207	KAVITHA U	84
8	18TC1208	MATHIYARASI S	96
9	18TC1209	NASIRA BANU M	88
10	18TC1210	PAVITHRA S	88
11	18TC1211	PRIYADARSINI D	88
12	18TC1212	RAJALAKSHMI M	88
13	18TC1213	RAJESWARI P	96
14	18TC1214	SANGARI A	92
15	18TC1215	SANGEETHA K	92
16	18TC1216	SUVEDHA V	96

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17	18TC1217	VASHUMATHY S	96
18	18TC1218	VISHNUPRIYA S	88

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VALUE ADDED COURSE
2020-2021

Department of Electronics and communication Engineering

20ECE02-Pattern recognition

NAME:

CLASS:

DATE:

1. What is the primary goal of pattern recognition?
   A) To compress data
   B) To recognize patterns and regularities in data
   C) To store data
   D) To encrypt data
   Answer: B) To recognize patterns and regularities in data

2. Which of the following is a common application of pattern recognition?
   A) Word processing
   B) Speech recognition
   C) Web browsing
   D) File compression
   Answer: B) Speech recognition

3. What does the term "feature extraction" refer to in pattern recognition?
   A) Selecting a subset of relevant features for use in model construction
   B) Compressing the data
   C) Normalizing the data
   D) Storing data
   Answer: A) Selecting a subset of relevant features for use in model construction

4. Which of the following algorithms is commonly used for supervised learning in pattern recognition?
   A) K-means clustering
   B) Decision trees
   C) Principal Component Analysis (PCA)
   D) Independent Component Analysis (ICA)
   Answer: B) Decision trees

5. In pattern recognition, what is a "classifier"?
   A) A model used to assign a label to an input
   B) A method for storing data
   C) A technique for data compression
   D) A method for data encryption

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Answer: A) A model used to assign a label to an input

6. Which of the following is NOT a distance metric commonly used in pattern recognition?
   A) Euclidean distance
   B) Manhattan distance
   C) Hamming distance
   D) Fourier distance
   Answer: D) Fourier distance

7. What is "overfitting" in the context of pattern recognition?
   A) When a model performs well on training data but poorly on new data
   B) When a model performs poorly on both training and new data
   C) When a model performs well on new data but poorly on training data
   D) When a model has too few features
   Answer: A) When a model performs well on training data but poorly on new data

8. Which technique is used to reduce the dimensionality of data?
   A) K-nearest neighbors (KNN)
   B) Principal Component Analysis (PCA)
   C) Support Vector Machines (SVM)
   D) Naive Bayes
   Answer: B) Principal Component Analysis (PCA)

9. What is the purpose of a "confusion matrix" in pattern recognition?
   A) To measure the performance of a classification model
   B) To normalize the data
   C) To extract features from data
   D) To reduce dimensionality
   Answer: A) To measure the performance of a classification model

10. Which method is used for unsupervised learning in pattern recognition?
    A) Decision trees
    B) K-means clustering
    C) Support Vector Machines (SVM)
    D) Linear regression
    Answer: B) K-means clustering

11. What is the "curse of dimensionality" in pattern recognition?
    A) The problem of having too few data points
    B) The problem of having too many features
    C) The problem of data being too noisy
    D) The problem of data being too simple
    Answer: B) The problem of having too many features

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12. Which algorithm is based on the concept of decision boundaries?
    A) Naive Bayes
    B) Support Vector Machines (SVM)
    C) K-means clustering
    D) Principal Component Analysis (PCA)
    Answer: B) Support Vector Machines (SVM)

13. In pattern recognition, what is "precision"?
    A) The ratio of true positives to all predicted positives
    B) The ratio of true positives to all actual positives
    C) The ratio of true negatives to all actual negatives
    D) The ratio of false positives to all predicted positives
    Answer: A) The ratio of true positives to all predicted positives

14. Which method is commonly used for text classification tasks?
    A) Naive Bayes
    B) K-means clustering
    C) Principal Component Analysis (PCA)
    D) Independent Component Analysis (ICA)
    Answer: A) Naive Bayes

15. What is "recall" in the context of pattern recognition?
    A) The ratio of true positives to all predicted positives
    B) The ratio of true positives to all actual positives
    C) The ratio of true negatives to all actual negatives
    D) The ratio of false positives to all predicted positives
    Answer: B) The ratio of true positives to all actual positives

16. Which of the following is a generative model?
    A) Support Vector Machines (SVM)
    B) Naive Bayes
    C) K-nearest neighbors (KNN)
    D) Decision trees
    Answer: B) Naive Bayes

17. What is "dimensionality reduction"?
    A) The process of increasing the number of features in the dataset
    B) The process of reducing the number of features in the dataset
    C) The process of normalizing data
    D) The process of dividing the data into training and testing sets
    Answer: B) The process of reducing the number of features in the dataset

18. Which term describes the process of grouping similar data points together?
    A) Classification
    B) Regression

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C) Clustering
D) Feature extraction
Answer: C) Clustering

19. What is a "false positive" in pattern recognition?
A) An incorrect negative prediction
B) An incorrect positive prediction
C) A correct negative prediction
D) A correct positive prediction
Answer: B) An incorrect positive prediction

20. Which technique is used for anomaly detection?
A) K-means clustering
B) Linear regression
C) Support Vector Machines (SVM)
D) Isolation Forest
Answer: D) Isolation Forest

21. What is "feature selection"?
A) The process of selecting a subset of relevant features for use in model construction
B) The process of extracting new features from existing ones
C) The process of normalizing the data
D) The process of compressing the data
Answer: A) The process of selecting a subset of relevant features for use in model construction

22. Which method is used to visualize high-dimensional data in 2D or 3D?
A) K-nearest neighbors (KNN)
B) t-Distributed Stochastic Neighbor Embedding (t-SNE)
C) Naive Bayes
D) Decision trees
Answer: B) t-Distributed Stochastic Neighbor Embedding (t-SNE)

23. What does the "ROC" curve represent in pattern recognition?
A) Receiver Operating Characteristic
B) Rate of Convergence
C) Regression Overfit Curve
D) Rate of Classification
Answer: A) Receiver Operating Characteristic

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24. What is "regularization" in machine learning?
A) A technique to prevent overfitting by adding a penalty for larger coefficients

B) A method for normalizing data
C) A technique for reducing dimensionality
D) A method for clustering data
Answer: A) A technique to prevent overfitting by adding a penalty for larger coefficient

25. Which algorithm is specifically designed for binary classification problems?
A) Support Vector Machines (SVM)
B) K-means clustering
C) Principal Component Analysis (PCA)
D) Independent Component Analysis (ICA)
Answer: A) Support Vector Machines (SVM)

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Department of Electronics and communication Engineering

20ECE02-Pattern recognition

NAME: VASHUMATHY.S

CLASS: III / ECE

DATE: 20/08/2020

1. What is the primary goal of pattern recognition?
   A) To compress data
   B) To recognize patterns and regularities in data
   C) To store data
   D) To encrypt data

24/25 96%

2. Which of the following is a common application of pattern recognition?
   A) Word processing
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6. Which of the following is NOT a distance metric commonly used in pattern recognition?
   A) Euclidean distance
   B) Manhattan distance
   C) Hamming distance
   D) Fourier distance

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12. Which algorithm is based on the concept of decision boundaries?
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    B) Support Vector Machines (SVM)
    C) K-means clustering
    D) Principal Component Analysis (PCA)

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13. In pattern recognition, what is "precision"?
    A) The ratio of true positives to all predicted positives
    B) The ratio of true positives to all actual positives
    C) The ratio of true negatives to all actual negatives
    D) The ratio of false positives to all predicted positives

14. Which method is commonly used for text classification tasks?
    A) Naive Bayes
    B) K-means clustering
    C) Principal Component Analysis (PCA)
    D) Independent Component Analysis (ICA)

15. What is "recall" in the context of pattern recognition?
    A) The ratio of true positives to all predicted positives
    B) The ratio of true positives to all actual positives
    C) The ratio of true negatives to all actual negatives
    D) The ratio of false positives to all predicted positives

16. Which of the following is a generative model?
    A) Support Vector Machines (SVM)
    B) Naive Bayes
    C) K-nearest neighbors (KNN)
    D) Decision trees

17. What is "dimensionality reduction"?
    A) The process of increasing the number of features in the dataset
    B) The process of reducing the number of features in the dataset
    C) The process of normalizing data
    D) The process of dividing the data into training and testing sets

18. Which term describes the process of grouping similar data points together?
    A) Classification
    B) Regression
    C) Clustering
    D) Feature extraction

19. What is a "false positive" in pattern recognition?
    A) An incorrect negative prediction
    B) An incorrect positive prediction
    C) A correct negative prediction
    D) A correct positive prediction

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20. Which technique is used for anomaly detection?
    A) K-means clustering
    B) Linear regression
    C) Support Vector Machines (SVM)
    D) Isolation Forest

21. What is "feature selection"?
    A) The process of selecting a subset of relevant features for use in model construction
    B) The process of extracting new features from existing ones
    C) The process of normalizing the data
    D) The process of compressing the data

22. Which method is used to visualize high-dimensional data in 2D or 3D?
    A) K-nearest neighbors (KNN)
    B) t-Distributed Stochastic Neighbor Embedding (t-SNE)
    C) Naive Bayes
    D) Decision trees

23. What does the "ROC" curve represent in pattern recognition?
    A) Receiver Operating Characteristic
    B) Rate of Convergence
    C) Regression Overfit Curve
    D) Rate of Classification

24. What is "regularization" in machine learning?
    A) A technique to prevent overfitting by adding a penalty for larger coefficients
    B) A method for normalizing data
    C) A technique for reducing dimensionality
    D) A method for clustering data

25. Which algorithm is specifically designed for binary classification problems?
    A) Support Vector Machines (SVM)
    B) K-means clustering
    C) Principal Component Analysis (PCA)
    D) Independent Component Analysis (ICA)

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Certificate of Completion

2020-2021

This is to certify that Mr/Ms ..... VISHNUPRIYA S .....

Year..III..... Department..ECE..... has successfully Completed the Value added course.

COURSE TITLE: ..... PATTERN RECOGNITION .....

SCORE: ..88.....

COURSE DURATION: ..... 9/8/20 to 13-03-20 .....

.....

HOD

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VALUE ADDED COURSES

2020-2021

Department of Electronics and Communication Engineering

20ECE03- Display systems

MARK SHEET

Sl. No	Register Number	Student Name	Marks
1	19TC1101	ABIRAMI S	88
2	19TC1102	BENINAL G	96
3	19TC1103	DINESH KUMAR V	92
4	19TC1104	GAUTHAM S	92
5	19TC1105	GOVINDARAJ K	96
6	19TC1106	I.KARTHESWARAN	96
7	19TC1107	I.MUTHURAMAN	84
8	19TC1108	KALAIVANAN M	96
9	19TC1109	KISHORE RAJAN N	88
10	19TC1110	NARAYANAN B	88
11	19TC1112	RAJALAKSHMI S	88
12	19TC1113	RESMINA FARVIN M	88
13	19TC1114	S.JEEVANANDAM	96
14	19TC1115	SATHISH N	92

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15	19TC1116	SOORIYA D	92
16	19TC1117	SUGANYA M	96
17	19TC1118	YOGAA SUPARNA K P	96

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VALUE ADDED COURSE
2020-2021

Department of Electronics and communication Engineering

20ECE03- Display systems

NAME: SATHISH.N
CLASS: II / ECE
DATE: 20/08/2020

1. What does LCD stand for?
   A) Light Crystal Display
   B) Liquid Crystal Display
   C) Linear Crystal Display
   D) Luminous Crystal Display

23/25 92%

2. Which type of display technology uses organic compounds that emit light when an electric current is applied?
   A) LCD
   B) LED
   C) OLED
   D) CRT

3. What does the term "resolution" refer to in the context of display systems?
   A) The brightness of the display
   B) The contrast ratio of the display
   C) The number of pixels on the screen
   D) The refresh rate of the display

4. Which display technology is known for its deep blacks and high contrast ratios?
   A) LCD
   B) LED
   C) OLED
   D) Plasma

5. What is the primary benefit of using LED backlighting in LCDs?
   A) Lower cost
   B) Thinner display panels
   C) Increased power consumption
   D) Reduced lifespan

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6. Which type of display technology was commonly used in older television sets and computer monitors?
   A) LCD
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7. What does the refresh rate of a display refer to?
   A) The number of pixels on the screen
   B) The number of times the display updates per second
   C) The contrast ratio of the display
   D) The viewing angle of the display

8. Which unit is used to measure the brightness of a display?
   A) Lumens
   B) Nits
   C) Watts
   D) Hertz

9. What is the main advantage of using e-ink displays?
   A) High refresh rates
   B) Low power consumption
   C) Vivid colors
   D) High brightness

10. What is the term for the distance between the centers of two adjacent pixels on a display?
    A) Pixel density
    B) Pixel pitch
    C) Resolution
    D) Aspect ratio

11. Which type of display is known for its use in virtual reality headsets due to its fast response time and high refresh rate?
    A) LCD
    B) LED
    C) OLED
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12. What does the acronym "HDR" stand for in display technology?
    A) High Definition Rendering
    B) High Dynamic Range
    C) High Density Resolution
    D) High Data Rate

13. Which factor is NOT typically improved by using HDR technology in displays?
    A) Contrast ratio
    B) Brightness
    C) Color accuracy
    D) Refresh rate

14. What is the primary function of an anti-glare coating on a display screen?
    A) To increase brightness
    B) To reduce reflections
    C) To improve color accuracy
    D) To increase contrast

15. In display technology, what does the term "aspect ratio" refer to?
    A) The ratio of brightness to contrast
    B) The ratio of the width to the height of the display
    C) The number of pixels per inch
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    A) A visual artifact where previous image frames are visible in the current frame
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18. Which technology uses tiny mirrors to project images and is commonly used in projectors?
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19. What is "burn-in" in OLED displays?
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20. Which display technology does not require a backlight?
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21. What does "color gamut" refer to in display systems?
    A) The range of refresh rates a display can handle
    B) The range of colors a display can reproduce
    C) The total number of pixels on a display
    D) The maximum brightness of a display

22. Which of the following is a characteristic of a TFT display?
    A) Thin Film Transistor technology for improved image quality
    B) Thick Film Transistor for higher durability
    C) Transparent Film Transistor for better transparency
    D) Triple Film Transistor for enhanced brightness

23. What is the primary advantage of a curved display?
    A) Lower cost
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25. Which of the following is a disadvantage of CRT displays compared to modern displays?
    A) High power consumption
    B) Deep blacks and high contrast
    C) High refresh rates
    D) Wide viewing angles

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2020-2021

Department of Electronics and communication Engineering

20ECE03- Display systems

NAME:

CLASS:

DATE:

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   C) The number of pixels on the screen
   D) The refresh rate of the display
   Answer: C) The number of pixels on the screen

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Answer: B) Thinner display panels

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Answer: C) OLED

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    C) The number of pixels per inch
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    Answer: B) The ratio of the width to the height of the display

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    Answer: C) OLED

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    C) The total number of pixels on a display
    D) The maximum brightness of a display
    Answer: B) The range of colors a display can reproduce

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    C) Transparent Film Transistor for better transparency
    D) Triple Film Transistor for enhanced brightness
    Answer: A) Thin Film Transistor technology for improved image quality

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    C) Higher resolution
    D) Reduced weight
    Answer: B) Enhanced immersion and wider field of view

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    C) The time it takes for a signal to reach the display
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    Answer: A) The time it takes for a pixel to change from one color to another

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    Answer: A) High power consumption

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Year ..... II ..... Department ..... E.C.E ..... has successfully Completed the Value added course.

COURSE TITLE: ..... DISPLAY ..... SYSTEM ..... SCORE: ..... 92 .....

COURSE DURATION: ..... 3/8/20 to 13/8/20 .....

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