

**PART A**

CFC 109 / UDCSA

(2h)

Answer ALL**10x2=20**

1. We have learnt that the use of interface metaphors in the interactive product is helpful in easy understanding and learning of the product by novices. Do you think it does have any limitations? If so, mention them.
2. Differentiate High-fidelity prototyping and Low-fidelity prototyping in interactive design.
3. Brief the four-evaluation paradigms that can be used to evaluate the performance of an interactive product.
4. Summarize the benefits of 'training wheels'-based learning of an interactive product.
5. Briefly mention the key principles of the user-centered interactive design approach.
6. List the functional requirements and non-functional requirements for the flight booking applications
7. Compare an asynchronous product, with a synchronous product, by focusing on their key differences and illustrate with suitable examples
8. How do the cognitive processes- Attention and Memory are related to each other?
9. Draw conversation for Action (CfA) framework that depicts buying a laptop in DELL showroom.
10. Explain the techniques used to describe the tasks of an interactive product with perfect examples

PART B**Answer any two of the following****2x10=20**

11. Discuss the conceptual frameworks that guide the design of socially-oriented interactive products. Incorporate a case study to demonstrate their impact on development and social dynamics.
12. Explain the DECIDE framework and its application in evaluating interactive systems or products.
13. Analyze the withdrawal operations of mobile-banking applications with the hierarchical task analysis (HTA).

PART C**Answer ALL****(1*10=10)**

14. Detail the design and usability principles critical to user experience in flight booking applications, highlighting key elements that enhance functionality and satisfaction.



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School of Computing

Third CIA Exam – Nov 2024

Course Code: INT318

Course Name: IT WORKSHOP

SCILAB/MATLAB

Duration: 90 minutes Max Marks: 50

PART- A

10 x 2 =20 Marks

Answer all the questions

LTC 204 / ITWSM-17

1
12
13
25

1. What are the commands used to control the matlab workspace, session and command window?
2. Create a matlab script to generate random numbers.
3. Write a command to solve the linear equations.
4. Create a function to validate the name and register number of the student.
5. Write a user defined function to find the maximum pixel value in the gray scale image.
6. List out the built-in functions to extract the texture features from the images.
7. Consider an image of size 256 x 256. Create a user-defined function to extract the sub image of 25 x 25 in the specified point.
8. List out the commands to visualize the numeric dataset.
9. Write a function to check if the elements in the array are sorted or not.
10. Brief note on functions to read the contents of the file.

PART-B

3 x 10=30 Marks

Answer any THREE questions

11.a) Write a matlab script to read array elements from the text file. Write the sorted array elements in sorted.txt.

b) Create a nested function to find the square root of a search element is present in an array or not.

12.Design a matlab app to classify the images using machine learning techniques.

13.Write a matlab script to perform 1-D and 2-D array manipulations.

14. Outline the following

a) Debugging process b) Matlab app components



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III CIA Exam – Nov 2024

Course Code: MGT211

Course Name: Fundamentals of
Human Resource Management

Duration: 90 minutes Max Marks: 50

PART A

LTC 216 / FHRM (8)

- 1 List out the various attrition methods adopted by an organization
- 2 Infer the term flexible working practices
- 3 What is Job specification
- 4 Recall the term Talent Management
- 5 State the meaning for the term Broad Banding
- 6 Define Executive Compensation
- 7 How Service Leadership concept gaining momentum in the present-day situation
- 8 Outline the term Management Development Programs
- 9 How Quality of life is important for the current scenario in an organization
- 10 Recall the term employee empowerment

PART B

Answer all the Questions $3 \times 10 = 30$ Marks

- 11 Describe the various methods of wage payment
- 12 Explain the issues and challenges of HR in service sector
- 13 Elaborately discuss the various methods of training
- 14 Discuss the steps involved in performance appraisal



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Third CIA Exam – Nov 2024

Course Code: MGT212

Course Name: Introduction to
Financial Management

Duration: 90 minutes Max Marks: 50

PART A $5 \times 2 = 10$ Marks

Answer all the Questions

1. Write the meaning of wealth maximization.
2. Mention the sources of cost of capital.
3. State the meaning of outsourcing.
4. Enumerate the motives for holding cash.
5. Name the basic problems involved in cash management.

PART B $2 \times 12 = 24$ Marks

Answer all the Questions

- (a) Differentiate between core working capital and temporary working capital. (4 Marks)
6. (b) Explain the methods for estimating working capital requirements of a business. (8 Marks)
- (a) A Rs.100 perpetual bond is currently selling for Rs.95. The coupon rate of interest is 13.5% and the appropriate discount rate is 15%. Calculate the intrinsic value of bond. Should it be bought? What is its yield to maturity. (8 marks)
7. (b) Define and compare going concern value and liquidation value (4 marks)

PART C $1 \times 16 = 16$ Marks

Answer the following Question

- 8 A choice is to be made between the two competing proposals which require an equal investment of ₹ 50,000 and are expected to generate net cash flows as under:

Year	1	2	3	4	5	6
Project A	25,000	15,000	10,000	NIL	12,000	6,000
Project B	10,000	12,000	18,000	25,000	8,000	4,000
P.V. Factor At 10%	0.909	0.826	0.751	0.683	0.621	0.564

Cost of capital of the company is 10%. Which proposal should be selected using payback period method? Suggest the best project.

No of com + cash after * 12.
inflow when



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School of Computing
CIA II Test – November 2024
course Code: CSE425
Course Name: Machine Learning Essentials
Duration: 90 minutes Max Marks: 50

PART-I $2*5 = 10$ (Answer any 2)

1. Explain any one of the hierarchical clustering methods using a dendrogram.
2. Non-uniform data can be clustered to find useful patterns. Explain (i) how cluster size can be determined and (ii) the quality of the clusters can be evaluated. (you may explain any one of the metrics used, for example: silhouette score, precision, or recall)
3. Given a $N*M$ dataset (where N is the number of instances and M is the number of features), explain how you will use non-parametric methods to detect the outliers. For example, say, using histogram analysis or any other method.

PART-II $4*10= 40$ (Answer any 4)

4. Explain the working principles of density based clustering techniques with illustration.
5. Explain the working principles of density based outlier detection technique using the local outlier factor method.
6. Explain the working principles of distance based outlier detection method using the nested loop concept.
7. Explain the strengths and weaknesses of any ten (10) Machine Learning models.
8. It has two parts
 - a. Frequent dataset mining based problems. Checkout figure. It has a simple 2×2 contingency matrix and a comparison of the six pattern evaluation methods for six different dataset. What inferences can you make from this observation?
 - b. ANN based problems:
 - i. Implement any one of AND, OR, NOT gate using single layer perceptron.
 - ii. Implement XOR gate using multi layer perceptron. (use hidden layers)

BONUS (10 mark)

9. Either (a) or (b)
 - a. Explain the math behind PCA analysis. Work out the math in a systematic way.
For multivariate data (or)
 - b. Explain the math behind any of the 40 ML models studied in the class and solve for a given multivariate dataset.

1. NOISE

2. BORDER

3 ?

2 × 2 Contingency Table for Two Items

	milk	\bar{milk}	Σ_{row}
coffee	mc	\bar{mc}	c
\bar{coffee}	\bar{mc}	mc	\bar{c}
Σ_{col}	m	\bar{m}	Σ

Comparison of Six Pattern Evaluation Measures Using Contingency Tables
for a Variety of Data Sets

Data

Set	mc	\bar{mc}	$m\bar{c}$	$\bar{m}c$	χ^2	lift	all_conf.	max_conf.	Kulc.	cosine
D_1	10,000	1000	1000	100,000	90557	9.26	0.91	0.91	0.91	0.91
D_2	10,000	1000	1000	100	0	1	0.91	0.91	0.91	0.91
D_3	100	1000	1000	100,000	670	8.44	0.09	0.09	0.09	0.09
D_4	1000	1000	1000	100,000	24740	25.75	0.5	0.5	0.5	0.5
D_5	1000	100	10,000	100,000	8173	9.18	0.09	0.91	0.5	0.29
D_6	1000	10	100,000	100,000	965	1.97	0.01	0.99	0.5	0.10