



CHHATRAPATI SHIVAJI MAHARAJ
UNIVERSITY
CSMUESE

BCA / BCA TCS / B.SC (CS/IT)

Roll No.:

Sem: BCA / BCA TCS / B.SC

(CS/IT) -SEM2

Date:

Time: 3 hrs

Course: MTHG2010- ELEMENT OF STATISTICS

Mark(s): 70

Instruction: Read all the questions carefully. Part A

[10*2=20]

Q.No Question

- 1 What is the importance of Statistics in daily life? [2]
- 2 Find mean of the following data 5,10,15,20,25,30 [2]
- 3 Define Statistics. [2]
- 4 What do you understand by Descriptive and Inferential statistics? [2]
- 5 Find mode of the following data 12, 5, 16,20,5,15,8,10,5,4 [2]
- 6 Explain std deviation and its mathematical relation with variance. [2]
- 7 Explain mean absolute deviation around mean. [2]
- 8 What do you mean by variability of data? [2]
- 9 What is regression? [2]
- 10 Define coefficient of Rank correlation. [2]

Part B

[5*10=50]

Q.No Question

- 11.1 1) Calculate the mean of the following data. [10]

| | | | | | |
|---|---|----|----|----|----|
| x | 5 | 10 | 15 | 20 | 25 |
| f | 3 | 2 | 6 | 4 | 8 |

- 2) Define the median from the following data :

| | | | | | |
|----------------|-------|-------|-------|-------|-------|
| Class interval | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 |
| Marks | 4 | 14 | 26 | 30 | 12 |

(or)

- 11.2 Write merits, demerits and uses of mean, mode and median. [10]

- 12.1 Calculate quartile deviation of the given data: [10]

| | | | | | |
|-----------------|-------|-------|-------|-------|-------|
| Marks | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 |
| No. of students | 6 | 12 | 22 | 20 | 8 |

Q.No Question

(or)

12.2 What is dispersion? Write merits and demerits of measures of dispersion.

[10]

13.1 Calculate Variance for the following data.

[10]

| | | | | | |
|-----------------|----|----|----|----|----|
| Marks | 5 | 15 | 25 | 35 | 45 |
| No. of Students | 55 | 60 | 45 | 50 | 50 |

(or)

13.2 Calculate coefficient of correlation for the following data:

[10]

| | | | | | |
|---|----|----|----|----|----|
| X | 38 | 41 | 30 | 42 | 47 |
| Y | 55 | 60 | 45 | 50 | 50 |

14.1 Find the lines of regression line of X on Y .

[10]

| | | | | | |
|---|---|---|---|---|---|
| X | 1 | 3 | 5 | 6 | 5 |
| Y | 1 | 2 | 3 | 4 | 5 |

(or)

14.2 Define Correlation. Explain types of correlation with example.

[10]

15.1 Write down the importance and usefulness of Statistics.

[10]

(or)

15.2 Define graph and explain all types of graph with diagram.

[10]



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Roll No.:

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Date:

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BCA / BCA TCS / B.SC (CS/IT)

Course: CSAB2010- DATA STRUCTURE USING C

Mark(s):70

Instruction: Read all the questions carefully.

Part A

[10*2=20]

| Q.No | Question | |
|------|--|-----|
| 1 | Calculate the Big "oh" for the equation $3n^2+4n+10$. | [2] |
| 2 | Calculate the omega "Ω" for the equation $10n^4+4n^2+20$ | [2] |
| 3 | What is two dimensional and multidimensional array? | [2] |
| 4 | What is sparse matrix? Give an example of lower and upper triangular matrix. | [2] |
| 5 | What is sequential search? | [2] |
| 6 | What is Binary search? | [2] |
| 7 | What is circular queue? | [2] |
| 8 | What is priority queue? Give its types. | [2] |
| 9 | Explain the following in reference to a graph: 1. Indegree 2. Outdegree | [2] |
| 10 | What is tree? | [2] |

Part B

[5*10=50]

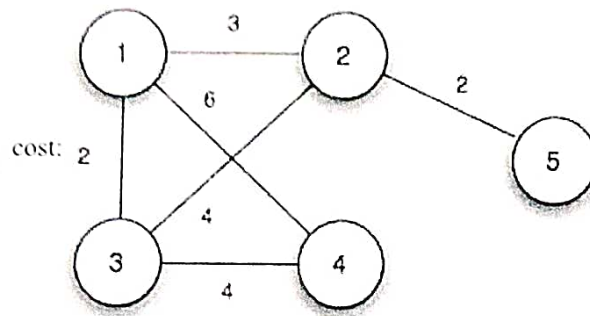
| Q.No | Question | |
|------|---|------|
| 11.1 | List and explain the data types in C . | [10] |
| | (or) | |
| 11.2 | Explain Time-space trade off in algorithms. | [10] |
| 12.1 | What is circular linked list? What are its advantages over singly linked list? Show using diagrams to insert an element incircular linked list. | [10] |
| | (or) | |
| 12.2 | Write an algorithm to traverse singly linked list. | [10] |
| 13.1 | Write the steps to search an element 34 using binary search in the given list 12,14,16,17,23,27,34,45,47,50,67,72,82,91 | [10] |
| | (or) | |
| 13.2 | Write the steps to sort the given elements using radix sort 123,024,654,213,456,589,345,987,786,120 | [10] |
| 14.1 | Write the algorithm for following operations on stack: i. Push ii. Pop | [10] |

Q.No Question

(or)

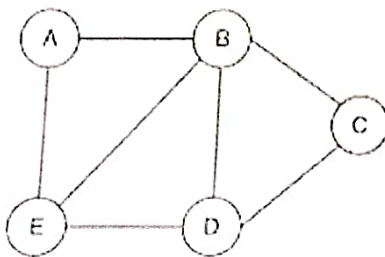
14.2 Write the algorithm for following operations on stack: i. Peek ii. Isempty() iii. IsFull()

15.1 Create a spanning tree using Kruskal's algorithm for the following graph and write the minimum



(or)

15.2 Perform the breadth first traversal and write the result for the following graph.





**CHHATRAPATI SHIVAJI MAHARAJ UNIVERSITY
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BCA / BCA TCS / B.SC (CS/IT)

Course: CSAB2020- DATABASE MANAGEMENT SYSTEM (DBMS)

Roll No.:

**Sem: BCA /
BCA TCS / B.
SC (CS/IT)-**

SEM2

Date:

Time:3 hrs

Mark(s):70

Instruction:Read All the questions carefully.

Part A

[10*2=20]

| Q.No | Question | |
|------|---|-----|
| 1 | What do you mean by DBMS? | [2] |
| 2 | What is RDBMS? | [2] |
| 3 | What is Entity? | [2] |
| 4 | What is Attribute? | [2] |
| 5 | What is Domain? | [2] |
| 6 | Define the relational schema . | [2] |
| 7 | What is SQL? | [2] |
| 8 | Define the table in RDBMS. | [2] |
| 9 | What is Transaction? | [2] |
| 10 | Define the Atomicity property of Tranaction . | [2] |

Part B

[5*10=50]

| Q.No | Question | |
|------|--|------|
| 11.1 | What do you mean by Database Independence? Explain the physical and logical data independence with suitable example. | [10] |
| | (or) | |
| 11.2 | What is database Management System? Discuss in detail the advantages and disadvantages of using a database system? | [10] |
| 12.1 | What are entity and attributes? How many type of attributes use in Relational model? Explain each with suitable example. | [10] |
| | (or) | |
| 12.2 | What do you mean by mapping cardinalities? Explain each with suitable example. | [10] |
| 13.1 | Define the SQL. What are the different subsets of SQL? Explain each subset with appropriate example. | [10] |
| | (or) | |
| 13.2 | What is Data types? Explain the different data type present in database. | [10] |
| 14.1 | What is transaction management in DBMS? Explain the properties of transaction with suitable example. | [10] |
| | (or) | |
| 14.2 | What are the ACID properties of transaction? Explain each with the suitable example. | [10] |
| 15.1 | What is the relational model. Explain the advantages and disadvantages of relational model. | [10] |

Q.No **Question**

(or)

- 15.2 a)What is relational Algebra? Explain the uses of relational Algebra. b)Explain the Selction and projection relational algebraic operations with example.



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Roll No.:

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(CS/IT)SEM2

Date:

Time:3 hrs

Course: CSAB2030- SOFTWARE ENGINEERING

Mark(s):70

Instruction:Read all the questions carefully.

Part A

[10*2=20]

Q.No Question

| | | |
|----|--|-----|
| 1 | Why there is a need of Software Engineering ? | [2] |
| 2 | List the features of Early Computer Programming in Software Engineering. | [2] |
| 3 | List the phases of Software Development Life Cycle in software engineering.. | [2] |
| 4 | List the different software development models in software engineering. | [2] |
| 5 | What is Functional requirements? | [2] |
| 6 | What is Non functional requirement? | [2] |
| 7 | What is Analysis and Design? | [2] |
| 8 | What is SRS in software Engineering ? | [2] |
| 9 | What is Verification and Validation in Software Testing? | [2] |
| 10 | What is Intergration testing ? | [2] |

Part B

[5*10=50]

Q.No Question

| | | |
|------|---|------|
| 11.1 | Explain the Principles of Software Engineering development. (or) | [10] |
| 11.2 | Explain all the features of Control flow based programming in Software Engineering. | [10] |
| 12.1 | What is Prototype model in software engineering and under what condition prototype model is used? (or) | [10] |
| 12.2 | Explain Agile Methodology in Software Engineering. | [10] |
| 13.1 | Explain Function Point Metrics. (or) | [10] |
| 13.2 | Explain Basic COCOMO Model. | [10] |
| 14.1 | Explain Software Requirement Specification in software Engineering in details. | [10] |

| Q.No | Question | (or) | |
|------|--|------|------|
| 14.2 | Explain the quality characteristics of Software Requirement Specification in Software Engineering. | | [10] |
| 15.1 | Explain Black box Testing in details. | (or) | [10] |
| 15.2 | Explain V-model in detail. | | [10] |



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Date:

Time: 3 hrs

BCA / BCA-TCS/ B.SC (CS/IT)

Course: EVSG2000- ENVIRONMENTAL STUDIES

Mark(s): 70

Instruction: Read all the questions carefully.

Part A

[10*2=20]

Q.No Question

- 1 Describe the need for Environmental studies. *- to protect - use of biodegradable waste - manufacturing of reusable from this environment* [2]
- 2 Write about- a. Chipko movement b. Appiko movement. [2]
- 3 What is a source of energy that is formed from the remains of plants and animals that lived millions of years ago? [2]
- 4 What makes oceans the least productive? [2]
- 5 State why at the herbivore level, the rate of assimilation of energy is called as secondary productivity. [2]
- 6 Which type of conservation measures – in situ or ex-situ will help the larger number of species to survive? Explain. [2]
- 7 Give at least three effects of noise pollution on human beings. [2]
- 8 Explain in detail about global warming. [2]
- 9 Explain briefly on the Indian Environmental Acts. [2]
- 10 Define the term population dynamics. [2]

Part B

[5*10=50]

Q.No Question

- 11.1 State few environmental issues related to natural resource management and their impact on socio economic conditions. [e.g., Chipko movement; Silent valley movement; Appiko Movement; Van mahotsava; Tehri Dam; etc.] *- deforestation - flooding - landslides - global warming - infertility of soil* (or) [10]
- 11.2 What is Environment? Discuss the scope of Environment. *(surrounding)* [10]
- 12.1 What is desertification? Give reasons for it. (or) [10]
- 12.2 What is the role of an individual in conservation of natural resources? *Saving environment* [10]
- 13.1 How would the issue of 'poaching of tigers' affect the functioning of the ecosystem? (or) [10]

| Q.No | Question | |
|------|---|------|
| 13.2 | Describe the approaches each for ex-situ conservation and in-situ conservation as a strategy for biodiversity conservation. | [10] |
| 14.1 | Discuss about water quality criteria (pH, Hardness, TS, density, color, odor, conductivity, minerals etc.) | [10] |
| | (or) | |
| 14.2 | How is the bird population affected by DDT? | [10] |
| 15.1 | Write notes on electronic wastes. Write about the various sources of e-wastes and issues associated with its disposal. | [10] |
| | (or) | |
| 15.2 | Explain in detail about family welfare programme, training and development. | [10] |