



DCCA – 501

**V Semester B.C.A. Degree Examination, February/March 2024
(NEP) (Freshers)**

**COMPUTER APPLICATIONS
Design and Analysis of Algorithms**

Time : 2½ Hours

Max. Marks : 60

Instruction : Answer *all* the Sections.

SECTION – A

I. Answer **any six** questions. **Each** question carries **2** marks. **(6×2=12)**

- 1) Define order of growth.
- 2) Write an algorithm to compute gcd of two numbers.
- 3) What do you mean by recursive algorithm ?
- 4) What are the various factors that affect the execution time ?
- 5) Write any two advantages of selection sort.
- 6) What is brute force approach ?
- 7) What is the concept of decrease and conquer methodology ?
- 8) Write a short note on greedy algorithm.
- 9) What is NP-class ?

SECTION – B

II. Answer **any four** questions. **Each** question carries **6** marks. **(4×6=24)**

- 10) Explain the fundamentals of algorithmic problem solving.
- 11) Write a general plan for analyzing non-recursive algorithm.
- 12) Explain the TSP with a suitable example.
- 13) a) What is knapsack problem ? **2**
b) Write any two advantages and disadvantages of divide and conquer technique. **4**
- 14) Explain merge sort algorithm with an example.
- 15) Write a program that implements Prim's algorithm to generate minimum cost spanning tree.

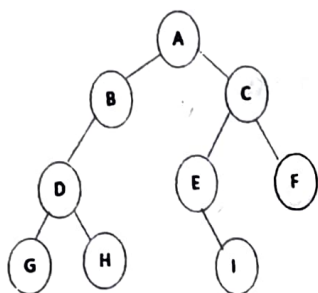
P.T.O.



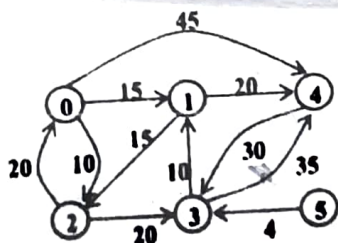
SECTION – C

III. Answer **any three** questions. **Each** question carries **8** marks. **(3×8=24)**

- 16) Define algorithm. What are the criteria that an algorithm must satisfy ?
- 17) Explain asymptotic notations.
- 18) Compare and contrast BFS and DFS.
- 19) Define tree. Traverse the following tree in pre-order, post-order and in-order.



- 20) Obtain the shortest distance and shortest path from node 5 to node 1 in the following graph :





DCCA – 502

**V Semester B.C.A. Degree Examination, February/March 2024
(NEP) (Freshers)**

COMPUTER APPLICATIONS

DSC14 – Statistical Computing and R Programming

Time : 2½ Hours

Max. Marks : 60

Instruction : Answer *all* the Sections.

SECTION – A

I. Answer **any six** questions. **Each** question carries **2** marks. **(6×2=12)**

- 1) What is a vector ?
- 2) Write the different classes used in R programming.
- 3) How do you call a function in R ?
- 4) What is plotting ?
- 5) What is common probability mass functions ?
- 6) What do you mean by normal distribution ?
- 7) Mention any two applications of t-distribution.
- 8) What is hypothesis testing ?
- 9) What is linear regression ?

SECTION – B

II. Answer **any four** questions. **Each** question carries **6** marks. **(4×6=24)**

- 10) Explain factors in R and its function.
- 11) Discuss different types of operators in R.
- 12) Explain uniform distribution with respect to probability density function with an example.
- 13) What is cumulative sum, product, minimum, maximum ? Explain with R program.
- 14) Explain the data visualization techniques with neat diagrams.
- 15) Explain one way ANOVA.

P.T.O.



SECTION – C

III. Answer **any three** questions. **Each** question carries **8** marks. **(3×8=24)**

- 16) Write a R program to create a matrix, taking a given vector of numbers as input and define the column and row names. Display the matrix.
- 17) Differentiate with bar and histogram plotting.
- 18) Discuss t-test with example.
- 19) Explain probability functions in details.
- 20) Explain ANOVA test with example.



DCCA – 503

V Semester B.C.A. Degree Examination, February/March 2024

(NEP) (Freshers)

**COMPUTER APPLICATIONS
DSC15 : Software Engineering**

Time : 2½ Hours

Max. Marks : 60

Instruction : Answer all the Sections.

SECTION – A

I. Answer any 6 questions. Each question carries 2 marks. (6×2=12)

- 1) Define Software engineering.
- 2) What is plan driven agile method ?
- 3) Define functional requirement.
- 4) What is requirement management ?
- 5) What are class diagrams ?
- 6) What is model driven engineering ?
- 7) What is Object Oriented Design ?
- 8) What is Layered architecture ?
- 9) Define Alpha testing.

SECTION – B

II. Answer any 4 questions. Each question carries 6 marks. (4×6=24)

- 10) Explain Waterfall model with a neat diagram.
- 11) Write a note on Requirement elicitation and analysis.
- 12) Explain context model with a diagram.
- 13) Explain various design patterns.
- 14) Explain development testing with a diagram.
- 15) Describe test driven development.

P.T.O.



SECTION – C

III. Answer any 3 questions. Each question carries 8 marks.

(3×8=24)

- 16) a) Briefly explain software engineering ethics. **4**
 - b) Briefly explain two requirement validation techniques. **4**
 - 17) Explain Generalization and Aggregation with examples.
 - 18) Explain Repository architecture and Client server architecture with examples.
 - 19) Discuss design models and interface specification.
 - 20) a) Explain various test cases of software testing. **4**
 - b) Write a note on Release testing. **4**
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CAVOC – 501

V Semester B.C.A. Degree Examination, February/March 2024

(NEP) (Freshers)

COMPUTER APPLICATIONS

Digital Marketing

Time : 2½ Hours

Max. Marks : 60

Instruction : Answer all the Sections.

SECTION – A

I. Answer any 6 questions. Each question carries 2 marks. (6×2=12)

- 1) How facebook are used in digital marketing ?
- 2) Why digital marketing is important in today's business landscape ?
- 3) State two demerits of social media marketing.
- 4) Mention the feature of Twitter.
- 5) What is content marketing ?
- 6) Mention any two content marketing metrics.
- 7) What is SEO ?
- 8) What is performance measurement in digital marketing ?
- 9) Define website Traffic.

SECTION – B

II. Answer any 4 questions. Each question carries 6 marks. (4×6=24)

- 10) What is the importance of developing a digital marketing strategy ?
- 11) What is the key process involved in planning a digital marketing campaign ?
- 12) Explain the objective of social media marketing.
- 13) What tools and platform can be used for content marketing analytics ?
- 14) Explain the concept of influencer marketing and its impact on brand promotion.
- 15) What are KPI's and why are they important in digital marketing ?

P.T.O.



SECTION – C

III. Answer **any 3** questions. **Each** question carries **8** marks. **(3×8=24)**

- 16) Explain the digital marketing strategy contribution to the success of the business.
 - 17) Which social media platform is commonly used for marketing purpose ?
 - 18) Explain how to create an effective E-mail campaign.
 - 19) What are the advantages and disadvantages of various content distribution platform ?
 - 20) Explain the key components of analytics in digital marketing.
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