NP – 401

V Semester B.C.A. Examination, February/March 2024
(NEP) (Freshers)
COMPUTER SCIENCE
Web Programming

Time : 2½ Hours | Max. Marks : 60

Instruction : *Answer* ***any four*** *questions from* ***each*** *Section.*

SECTION – A

I. Answer **any four** questions. **Each** question carries **2** marks. **(4×2=8)**

1) What is DOM ?
2) What is a Web Server and Web Browser ?
3) Differentiate between HTML and XML.
4) What are dynamic documents in Web development ?
5) Which data types are supported in PHP ?
6) What is function ? How to define it in PHP ?

SECTION – B

II. Answer **any four** questions. **Each** question carries **5** marks. **(4×5=20)**

7) What are events and how are they handled in JavaScript ?
8) Design an HTML form to accept username and password and perform validation using JavaScript.
9) Discuss the role of XSLT style sheets in displaying and transforming XML documents.
10) Explain various looping statements in PHP with an example.
11) What are cookies ? How to create and delete a cookie in PHP ?
12) List and explain all types of date and time function in PHP.

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SECTION – C

III. Answer **any four** questions. **Each** question carries **8** marks. **(4×8=32)**

13) Explain the method and properties used for DOM tree traverse and modify using JavaScript. **8**

14) What are the various methods to access the HTML form elements using JavaScript ? **8**

15) Write a short note on

a) DTD

b) XML Schema. **(4+4)**

16) a) Compare the uses of echo and print commands in PHP.

b) Differentiate between constant and variable in PHP. **(4+4)**

17) Outline the steps involved in connecting to a database using PHP. **8**

18) Explain in detail different types of arrays in PHP with examples. **8**

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V Semester B.C.A. Degree Examination, February/March 2024
(NEP) (Freshers)
COMPUTER SCIENCE
Data Analytics

Time : 2½ Hours Max. Marks : 60

Instruction : *Answer **all** the Sections.*

SECTION – A

I. Answer **any four** questions. **Each** question carries **two** marks. **(4×2=8)**

1) Define the term Data Analytics.
2) Name any four data visualization tools used.
3) Explain the term Normal Distribution.
4) Define the following events :
   i) Mutually exclusive
   ii) Equally likely.
5) What is power query ?
6) What are Filters in Power BI ?

SECTION – B

II. Answer **any four** questions. **Each** question carries **five** marks. **(4×5=20)**

7) Write a note on Data Analytics Life Cycle.
8) Define Hypothesis. Explain the purpose of ANOVA in Hypothesis testing.
9) What are the various steps involved in any Analytics Project ?
10) State and prove Baye's Theorem.
11) The owner of Maumee Ford-volvo wants to study the relationship between the age of a car and its selling price. Listed below is a random sample of 10 used cars sold at the dealership during last year.

Age (years)	9	7	11	12	8	7	8	11	10	12
Selling Price ($000)	8.1	6.0	3.6	4.0	5.0	10.0	7.6	8.6	8.0	6.0

Calculate the correlation coefficient between car's age and its sale price.

12) What are the advantages of Power BI ?

P.T.O.

SECTION – C

III. Answer **any four** questions. **Each** question carries **eight** marks. **(4×8=32)**

13) With an example explain the different types of analytics.

14) With a case study explain how analytics has helped the food industry to improve their business.

15) Define regression. Find the two regression equations for the data of 10 students in two subjects given below :

English	75	80	93	65	87	71	98	68	89	77
Economics	82	78	86	72	91	80	95	72	89	74

16) a) What are the various types of refresh options provided in power BI ? **(3+5)**

b) What are the building blocks of Microsoft Power BI ? Explain.

17) a) What is the purpose of COUNT, COUNTA, COUNTBLANK and COUNTIF in Excel ? **(4+4)**

b) List the difference between Logistic Regression and Linear Regression.

18) a) Differentiate between Dashboard and Reports. **(4+4)**

b) Explain the different visualisation techniques used for spatial data.

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V Semester B.C.A. Examination, February/March 2024
(NEP) (Freshers)
COMPUTER SCIENCE
Computer Graphics (Elective – I)

Time : 2½ Hours | Max. Marks : 60

Instruction : *Answer* ***any four*** *questions from* ***each*** *Sections.*

SECTION – A

I. Answer **any four** questions. **Each** question carries **2** marks. **(4×2=8)**

1) Define computer graphics.
2) What is geometric transformations ?
3) Distinguish between the Random and Raster scan display.
4) Write the matrix representation and homogeneous coordinates.
5) What are the types of clipping ?
6) What are spline curves ?

SECTION – B

II. Answer **any four** questions. **Each** question carries **5** marks. **(4×5=20)**

7) List out the component of CRT. Explain their functionality.
8) Explain and write steps for DDA line drawing algorithm.
9) Give suitable examples and explain all 3D Transformations.
10) Explain the following composite transformation
    i) Translation
    ii) Rotation.
11) Give matrix representation for 2D scaling.
12) Explain different types of text clipping in brief.

P.T.O.

SECTION – C

III. Answer **any four** questions. **Each** question carries **8** marks. **(4×8=32)**

13) Explain the Bresenham's ellipse algorithm.

14) Explain the types of parallel projection with examples.

15) Explain the Cohen Sutherland line clipping algorithm with examples.

16) Differentiate parallel and perspective projection and drive their projection matrices.

17) List out the input devices. Explain their functions.

18) List out the basic transformation techniques. Explain scaling transformation with respect to 2D.

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V Semester B.C.A. Degree Examination, February/March 2024
(NEP) (Freshers)
COMPUTER SCIENCE
SEC – Cyber Crime, Cyber Law and Intellectual Property Rights

Time : 2½ Hours Max. Marks : 60

Instructions : 1) *Part – A : Answer **any four** questions.*
2) *Part – B : Answer **any four** questions.*
3) *Part – C : Answer **any four** questions.*

PART – A

Answer **any four** questions : **(2×4=8)**

1. Define cyber crime.
2. What is web jacking ?
3. Write any four advantages of net banking.
4. What are the uses of social media platforms ?
5. Define IPR. Mention any four types of IPR.
6. What is patent ?

PART – B

Answer **any four** questions : **(5×4=20)**

7. Write the steps involved in preparing the checklist for reporting cyber crime online.
8. Briefly discuss the objectives of Personal Data Protection Bill 2019.
9. Explain briefly the preventive measures that can be taken to avoid cyber attacks.

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10. Briefly discuss two factor authentication.

11. Explain the steps involved in installation and configuration of computer antivirus.

12. What is a trademark ? Write the procedure to register a trademark in India ?

PART – C

Answer **any four** questions : **(8×4=32)**

13. What is email phishing ? Briefly discuss the key indicators to recognize phishing emails.

14. Write short notes on categories of cyber criminals.

15. Discuss the key provisions of IT Act 2000.

16. Explain the steps involved in preparing the checklist for secure net banking.

17. Explain the importance of security patch management and updates in computers.

18. What is Geographical Indication ? Write the significance of Geographical Indication.

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V Semester B.C.A. Examination, February/March 2024
(NEP) (Freshers)
COMPUTER SCIENCE
Artificial Intelligence

Time : 2½ Hours Max. Marks : 60

Instruction : *Answer **any 4** questions from **each** Parts.*

PART – A

I. Answer **any four** questions. **Each** question carries **2** marks. **(4×2=8)**

1) List any two weak AI and strong AI.
2) Explain the properties of minmax algorithm.
3) Define implication with truth table.
4) List different types of learning.
5) Define any two disadvantages of Fuzzy logic.
6) What do you mean by clustering ? List any two popular clustering algorithm.

PART – B

II. Answer **any four** questions. **Each** question carries **5** marks. **(4×5=20)**

7) Explain agents and its environment with a neat diagram.
8) Explain backward chaining with an example.
9) Explain decision trees.
10) Explain any 5 applications of computer vision.
11) Explain left most and right most derivation. Construct parse tree with an example.
12) Explain any five characteristic of expert system.

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PART – C

III. Answer **any four** questions. **Each** question carries **8** marks. **(4×8=32)**

13) a) Explain 8-queens problem with a neat diagram. 5

b) List any three advantages of A* search. 3

14) a) Define unification in FOL. Write the pseudocode of unification. 6

b) What do you mean by chunking in NLP ? 2

15) a) Explain Bayes' Theorem in AI. 6

b) What is uncertainty in AI ? 2

16) Explain the architecture of ANN with a neat diagram. 8

17) a) Briefly explain machine learning life cycle. 5

b) List 3 disadvantages of Robotics. 3

18) a) Explain how to build NLP pipeline with example. 6

b) Define non-monotonic logic. 2