



'समानो मन्त्रः समितिः समानी'

UNIVERSITY OF NORTH BENGAL

B.Sc. Honours 6th Semester [Special] Examination, 2023

DSE-P4-COMPUTER SCIENCE (64)

Time Allotted: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks.

**The question paper contains DSE64-E1, DSE64-E2 and DSE64-E3.
The candidates are required to answer any *one* from *three* courses.
Candidates should mention it clearly on the Answer Book.**

DSE64-E1

MACHINE LEARNING

GROUP-A

Answer any *five* questions from the following

1×5 = 5

1. Define confusion matrix.
2. What is the difference between classification and regression?
3. Name any two problems that can be solved using machine learning.
4. Define the term outlier.
5. What is meant by vectorization?
6. Define overfitting.
7. What is local minima?
8. Define the term feature.

GROUP-B

Answer any *three* questions from the following

5×3 = 15

9. Define neural network. Explain its working along with its merits and demerits.
10. Explain how reinforcement learning problem differs from other function approximation.
11. What is polynomial regression? Explain with an example.
12. Explain the key elements of machine learning.
13. How can we handle categorical features in machine learning? Explain your answer.

GROUP-C

Answer any *two* questions from the following

10×2 = 20

14. Explain Naïve Bayes classification method with an example.
15. Implement Linear Regression problem. For example, based on a dataset comprising of existing set of prices and area/size of the houses, predict the estimated price of a given house.
16. What is linearly in separable problem? Give an example. Design a network of perceptrons to implement XOR gates.
17. Discuss gradient descent learning method.

DSE64-E2

SYSTEM PROGRAMMING

GROUP-A

Answer any *five* questions

1×5 = 5

1. What is a bootstrap loader?
2. Define grammar.
3. What is the function of an assembler?
4. When do we say a grammar is ambiguous?
5. What is a symbol table?
6. Discuss the role of a parser.
7. Define an absolute loader.
8. What is a macro?

GROUP-B

Answer any *three* questions

5×3 = 15

9. Differentiate between a compiler and an interpreter.
10. Describe the logic flow of a one pass assembler.
11. Write a short note on L-R parser.
12. How does a symbol table manager work in the different phases of the compiler?
13. Explain relocation with a suitable example.

GROUP-C

Answer any *two* questions

10×2 = 20

14. Describe the phases of a compiler.
15. Describe a single pass and two pass assembler with its merits and demerits.
16. Write a note on syntax directed translation.
17. What are the different code optimization techniques?

DSE64-E3

CLOUD COMPUTING

GROUP-A

Answer any *five* questions from the following

1×5 = 5

1. What is cloud computing?
2. Mention one benefit and one limitation of cloud computing.
3. Define Grid computing.
4. What is client-server architecture?
5. What are the different trends in computing?
6. Define Hybrid cloud.
7. Differentiate between private cloud and public cloud.
8. What is a distributed file system?

GROUP-B

Answer any *three* questions from the following

5×3 = 15

9. Discuss Cluster computing and Distributed computing with suitable example.
10. Explain various applications of cloud computing.
11. Discuss Network level security and Host level security in cloud computing.
12. Write a short note on 'Microsoft Azure'.
13. Discuss about Service Level Agreements in cloud computing.

GROUP-C

Answer any *two* questions from the following

10×2 = 20

14. Describe the different cloud service models with examples.
15. Explain Hybrid cloud and Community cloud.
16. Write a short note on 'Google App Engine'.
17. Write a short note on cloud security.

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