



'समानो मन्त्रः समितिः समानी'

UNIVERSITY OF NORTH BENGAL
BCA Honours 6th Semester Examination, 2023

DSE-P4-BACHELOR OF COMPUTER APPLICATION (64)

Time Allotted: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks.

**The question paper contains DSE64:E1 and 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

1×5 = 5

1. What is intelligent behaviour of a machine?
2. What is degree of correlation?
3. What is data analysis?
4. What is Knowledge Base?
5. How will you select supervised technique while designing a machine learning problem?
6. What is reinforcement learning?
7. What is the significance of Sigmoid function?
8. What is threshold?

GROUP-B

Answer any *three* questions

5×3 = 15

9. Discuss single layer perception.
10. What are the different steps of learning process of SOM?
11. Differentiate between classification and clustering with the help of examples.
12. Discuss the difference between test data set and validation data set.
13. Explain k-fold cross validation.

GROUP-C

Answer any *two* questions

10×2 = 20

14. Explain perceptron learning with the help of an example.
15. Explain different types of clustering techniques with the help of examples.
16. Explain Bayesian method with the help of example.
17. Explain the problem of overfitting with the help of an example.

DSE64:E2

SYSTEM PROGRAMMING

GROUP-A

1. Answer any *five*:

1×5 = 5

- (a) What is system programming?
- (b) What is the main function of Linker?
- (c) What do you mean by Static Linking?
- (d) What is interpreter?
- (e) What do you mean by ambiguity of grammar?
- (f) What is YACC?
- (g) Define device driver.
- (h) What are the advantages of Macro?

GROUP-B

2. Answer any *three*:

5×3 = 15

- (a) Write a code on intermediate code generation in compiler.
- (b) What is Linker? Explain the different Linking scheme.
- (c) Explain the use of data structures in the assembler.
- (d) What is loader? Explain the working of the absolute loader.
- (e) Discuss difference between compiler and interpreter.

GROUP-C

3. Answer any *two*:

10×2 = 20

- (a) List out the phases of compiler in detail with the help of diagram.
- (b) Explain all the stages of intermediate code generation and code optimization techniques.
- (c) Discuss in detail the first pass of assembler with its algorithms.
- (d) Explain the parsing techniques with a hierarchical diagram. What are the problems associated with Top Down Parsing.

DSE64:E3

CLOUD COMPUTING

GROUP-A

Answer any *five* questions

1×5 = 5

1. Define utility computing.
2. Name any two cloud service providers.
3. List any two public offerings of PaaS.
4. Define private cloud.
5. What is the difference between scalability and elasticity?
6. What is the importance of a virtual machine?
7. Point out any two design challenges in a cloud architecture.
8. Define distributed file system.

GROUP-B

Answer any *three* questions

5×3 = 15

9. Discuss traditional vs the cloud based approach of computing.
10. Explain the benefits of cloud computing.
11. Define cloud computing. What are the characteristics of cloud computing?
12. Explain different types of risks in cloud computing.
13. Discuss the two level architecture of resource allocation in a cloud using a suitable diagram.

GROUP-C

Answer any *two* questions

10×2 = 20

14. Explain various cloud deployment models.
15. Discuss various aspects of Infrastructure Security with respect to a cloud.
16. Explain the NIST architecture.
17. Write short notes on (any *two*):
 - (a) Google App Engine
 - (b) Hybrid cloud
 - (c) Pre-cloud computing
 - (d) Eucalyptus.

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