



UNIVERSITY OF NORTH BENGAL
B.Sc. Programme 5th Semester Examination, 2020

DSE1-COMPUTER SCIENCE

Full Marks: 40

ASSIGNMENT

*The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.
All symbols are of usual significance.*

**The question paper contains DSE1A-1 and DSE1A-2.
The candidates are required to answer any *one* from *two* courses.
Candidates should mention it clearly on the Answer Book.**

**DSE1A-1
DATA BASE MANAGEMENT SYSTEM**

Answer any *two* questions from the following

20×2=40

1. (a) What is DBMS? Explain advantages and disadvantages of DBMS. 10
(b) Explain different types of databases. 10
2. (a) Explain Data abstraction or 3 schema architecture. 10
(b) What are the database design challenges? 10
3. (a) Explain The object Oriented data model. 10
(b) Explain Entity Relationship data model with example. 10
4. What is the purpose of ER diagram? Create an ERD for a car dealership. The dealership sells both new and used cars, and it operates a service facility. Show entity names, primary keys, attributes for each entity, relationships between the entities and cardinality. 20
5. (a) Explain different types of keys available in Relational Model. 10
(b) Explain different types of joins in DBMS. 10
6. (a) Explain different types of Entities and Attributes. 10
(b) Explain Codd's Relational database rules. 10

DSE1A-2
OPERATING SYSTEMS

Answer any two questions from the following

20×2=40

1. (a) List and explain the functions and services of an operating system and OS operations. 10
(b) Compare the UNIX and Windows operating system. 10

2. Write short note on following: 20
 - (a) Time Sharing Systems
 - (b) Main Frame Systems
 - (c) Batch Systems
 - (d) Real Time Systems

3. (a) Explain the purpose and importance of system calls and discuss the calls related to device management and communication in brief. 10
(b) Find out which algorithm among FCFS, SJF and Round Robin with quantum 10, would give the minimum average time for a given workload. 10

4. Write Short note on following Scheduling: 20
 - (a) FCFS (First Come First Serve)
 - (b) Preemptive SJF (Shortest Job First)
 - (c) Non-Preemptive SJF (Shortest Job First)
 - (d) Round Robin

5. (a) What do you understand by process and also write down the process states in detail. 10
(b) What is the role of PCB (Process Control Block)? Also explain each component of PCB. 10

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