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L2E004

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Reg. No. _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

SECOND SEMESTER MCA (LATERAL ENTRY) DEGREE EXAMINATION, MAY 2017

RLMCA266 : ADVANCED DATABASE SYSTEMS

Maximum Marks : 60

Time : 3 Hours

PART A

Answer all questions. Each question carries 3 marks

1. Which are the functions of a hard disk controller?
2. Classify various ways in which data can be organized.
3. Define a hash function and illustrate its application in DBMS.
4. Employ the technique to arrange the following data in a B-Tree of order 5
1, 12, 8, 2, 25, 6, 14, 28, 17, 7, 52, 16, 48, 68, 3, 26, 29, 53, 55, 45, 67
5. With a neat diagram, explain the steps in query processing
6. Compare HTML and XML.
7. When it is useful to have replication or fragmentation of data? Explain.
8. What do you mean by BASE properties of a transaction?

PART B

Answer any one question from each module. Each question carries 6 marks

MODULE I

9. Discuss the working of a magnetic disk read – write mechanism.
- OR
10. Explain in detail about RAID storage system.

MODULE II

11. Design a multilevel index for employee details and explain its efficiency.
- OR
12. Analyze the merits and demerits of any three indexes available.

MODULE III

13. Evaluate the query cost estimates for different selection algorithms.

OR

14. With the help of an example, explain external sort-merge algorithm.

MODULE IV

15. Construct an ER diagram for a hospital management system with a set of doctors and a set of patients. With each patient, a series of various tests and examinations are conducted. On the basis of preliminary report patients are admitted to a particular ward.

Create a suitable database schema for the above ER diagram.

OR

16. Describe the object oriented features of a an object oriented databases.

MODULE V

17. Discover the various distributed database architectures used in the industry.

OR

18. Explain the various commit protocols used in a distributed database.

MODULE VI

19. Differentiate on SQL and NoSQL database.

OR

20. Write short notes on

- i) MongoDB ii) HBase iii) Cassandra
