

M.Sc. 2nd Semester Examination, 2023

COMPUTER SCIENCE

PAPER – COS-201(M1 & M2)

Full Marks : 50

Time : 2 hours

The figures in the right hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

PAPER – COS 201(M1)

(Advanced DBMS)

[Marks : 25]

GROUP – A

Answer any two questions : 2 × 2

- 1. Define the “Referential Integrity”?**
- 2. Name and briefly describe the five SQL built-in functions.**

(Turn Over)

3. What is Data Model ? Give examples.
4. What is Weak Entity set ?

GROUP – B

Answer any two questions : 4 × 2

5. Discuss the external view, internal view in three-tier database architecture. 4
6. Define BCNF. How does it differ from 3NF ? 1 + 3
7. Explain with examples the terms Super key, Candidate key and Primary key. 4
8. What is normalization ? What is the necessity of it ?

GROUP – C

Answer any one question : 3 × 1

9. Discuss the 'insertion anomalies', 'update anomalies' and 'deletion anomalies' with respect to normal forms with suitable example and suggest a method to overcome them.

10. Construct an E-R Diagram for the following problem :

Each PhD student has exactly one dissertation committee which consists of 4-5 faculty and each committee is for exactly one student. Each student has an ordered list of advisors including the primary advisor followed by 0 or more secondary advisors. Each student has a unique studid, a name, and a major. Each committee has a unique committee id, and the date the committee is formed. Each faculty has a unique facid and a name. Each faculty can participate in multiple committees and be the advisors (either primary or secondary) of several students.

[*Internal Assessment* – 5 Marks]

PAPER – COS 201(M2)

(*Green Computing*)

[*Marks : 25*]

GROUP – A

Answer any two questions : 2 × 2

11. Define Green Computing.
12. What are the 3Rs of Green IT ?
13. What is Carbon footprint ?
14. What do you mean by Green washing ?

GROUP – B

Answer any two questions : 4 × 2

15. Describe the environmental impact of IT ?
16. Briefly explain the two waves of Green IT ?
17. Write a short notes on holistic approach of Green IT.
18. Briefly describe the global warming and Green-house gases effect on environment.

(5)

GROUP – C

Answer any **one** question :

8 × 1

19. What is Sustainable Development ? Describe the three complementary IT-enabled approaches to improve environmental sustainability ?
20. Explain the different stages of life cycle of a device or hardware.

[*Internal Assessment – 5 Marks*]
