2B4A22495

(Pages : 2)

Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fourth Semester B.Sc Degree Examination, April 2022

BCS4B06 - Fundamentals of Database Management System and RDBMS

(2019 Admission onwards)

Time: 2 hours

Max. Marks: 60

Note: You can answer all the questions in Sections A&B. But there shall be Ceiling in each section.

PART – A

Answer *all* questions.
Each question carries Two mark.
Ceiling -20 Marks

1. Differentiate DROP and TRUNCATE Commands
2. Discuss the concept of Entity, Entity set, Attributes, Constraints
3. Distinguish between File Systems and DBMS?.
4. What are Relational Calculus and Domain Calculus?
5. Discuss Range Searching and Pattern Matching in SQL?
6. What integrity rules exist in DBMS?
7. Differentiate DDL, DML, DCL statements SQL?
8. What are Triggers? What is it used for?
9. What are stored procedures? What is its role?
10. Define Cardinality and Modality.
11. What is Transaction? What are the properties of Transaction?
12. What are Locks? Why they are used?

PART – B

Answer *all* questions.
Each question carries Five marks.
Ceiling -30 Marks

13. Why the use of DBMS recommended in application development? Explain by listing its major advantages?
14. What is Relational Algebra? Elucidate various fundamental operations in Relational Calculus?
15. Elaborate Third Normal Form and Boyce-Codd Normal Form. Differentiate between these two.

16. Define the concept of Join in SQL? Enumerate the different ways to join tables.
17. Write on various possible states of Transaction and ACID Properties.
18. Briefly discuss two phase protocol.
19. With a neat block diagram, elaborate different levels of data abstraction

PART - C

Answer any *one* questions.
Each question carries Ten marks.

20. Explain ER Model with an example. Elucidate the steps involved in relational database design by mapping ER to Relational Model.
21. Consider the following tables with primary keys undelined

SUPPLIERS(SID, SNAME, LOCATION)

PRODUCT(PID, PNAME, COLOR)

CATALOG(SID, PID, COST)

CUSTOMER(CID, CNAME, ADDRESS, LOCATION)

PURCHASE(CID,PID, QNTY, AMOUNT)

Write SQL Statements for the following

1. Create tables with primary keys and foreign keys (5)
2. Insert proper values in to all the tables (1)
3. List distinct products purchased by a customer (2)
4. List products supplied by one supplier only(2)
5. Remove the CATALOG Table.

(1 x 10 = 10 Marks)

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Reg. No:.....

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FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fourth Semester B.Sc Degree Examination, April 2022

BCS4A14 – Principles of Software Engineering

(2019 Admission onwards)

Time: 2 ½ hours

Max. Marks: 80

Note: You can answer all the questions in Sections A&B. But there shall be Ceiling in each section.

PART – A
Answer *all* questions.
Each question carries Two marks.
Ceiling -25 Marks

1. What is Software Engineering and What is its role in Software Development Process?
2. What is meant by Software Process ?
3. Define Agile Model of Development.
4. Define SRS.
5. Define the concept of State in a System.
6. What are the components of a Software Requirement Specification?
7. What is Cohesion?
8. What is OOD?
9. Define User Interface Design.
10. What is Code Walkthrough?
11. What is Black box Testing?
12. Why Documentation is important in Software Development Process?
13. What is meant by Software Maintenance.
14. What is Re-engineering Process?
15. What is Version Control?

PART – B

Answer *all* questions.
Each question carries Five marks.
Ceiling -35 Marks

16. Explain RAD Process Model.
17. Explain the steps involved in the Requirement Analysis and Specification Phase.
18. Dissect the steps involved in Object Oriented Design.
19. What are the various Design Principles?
20. Discuss various commonly occurring errors in coding process.
21. Outline Test Driven Development Process.
22. Recollect various Testing fundamentals.
23. What are the various approaches for Structural Testing in White box Testing?

PART - C

Answer any *two* questions.
Each question carries Ten marks.

24. Illustrate various levels of Cohesion.
25. Discuss Test Driven Development.
26. Compare the strengths and weaknesses of Prototype Model and Iterative Model.
27. What is Software Configuration Management (SCM)? What are the major steps in SCM?

(2 x 10 = 20 Marks)

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FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fourth Semester B.Sc Degree Examination, April 2022

BCS4A13 – Object Oriented Concepts through Python

(2019 Admission onwards)

Time: 2 ½ hours

Max. Marks: 80

Note: You can answer all the questions in Sections A&B. But there shall be Ceiling in these sections

PART – A
Answer *all* questions.
Each question carries Two mark.
Ceiling -25 Marks

1. Given the tuple fruits=('apple', 'orange', 'banana','grapes'), Write the output of fruits[1:3]
2. What is meant by polymorphism in OOPs?
3. Name any two python third party libraries.
4. Create a dictionary 'books' with key 'title' as 'Python Programming' and the key 'author' as 'Balaguruswamy'?
5. How to use eval function in Python?
6. Write about fmod() and max() functions of math module.
7. Write the differences between break and continue statement.
8. Write a python script that returns a new set with all items from both sets by removing duplicates.
9. How to remove an item in a dictionary by specifying its key?
10. Write how to replace a substring with another substring in a string with example.
11. Write a Python program to swap two numbers using multiple return values in a single return statement.
12. Write the difference between 'in' and 'not in' operators.
13. What is the output of math.remainder(10, 3) and math.remainder(8, 3)?

14. Compare tuple and list.

15. from datetime import date

    d=date.today()

    Using the above code, write statements to print each component of date such as day, month and year separately.

PART – B

Answer *all* questions.
Each question carries Five marks.
Ceiling -35 Marks

16. Write a python program to find the roots of a quadratic equation.

17. Illustrate with example how to loop through a dictionary using values() and items() methods.

18. Explain the significance of global keyword with example.

19. Explain operations used with Tuples in Python.

20. Write a note on variable length arguments with examples.

21. Write a python program to generate n prime numbers.

22. Define recursion. Write a program to multiply two numbers using recursion.

23. Explain how to create class and its instances using Python

PART - C

Answer any *two* questions.
Each question carries Ten marks.

24. Write a note on following methods of Sets in python.

    a) difference() b) update() c) union() d) discard() e) add()

25. Explain loop statements with examples.

26. Explain passing of arguments with examples.

27. Illustrate with examples any three datetime classes of datetime module.

2 x 10 = 20 Marks