BCA

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Reg. No. : .....

Name : .....

Third Semester B.C.A. Degree Examination, February 2024

Career Related First Degree Programme under CBCSS

Group 2(b) – Computer Applications

Core Course

CP 1341 : COMPUTER NETWORKS

(2021 Admission Onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A

Very Short Answer Questions. Answer **all** questions. Each question carries **1** mark.

1. What do you mean by computer networks?
2. What do you mean by multi casting?
3. What do you mean by framing?
4. Explain the use of parity bit.
5. What do you mean by congestion control?
6. Expand the term CSMA/CD.
7. List various types of transmission media.
8. What do you mean by IP address?

9. What is the use of FTP?

10. What is the need of a hub?

(10 × 1 = 10 Marks)

SECTION – B

Brief answer questions. Answer any **eight** questions. Each question carries **2** marks.

11. Explain the use of communication satellites.

12. Short note on TCP/IP reference model.

13. Write note on piggybacking.

14. Explain GSM.

15. List out LAN transmission equipments.

16. Short note on CSMA protocol.

17. Write note on UDP.

18. Explain format of IPv6.

19. What do you mean by virtual circuit network?

20. Mention uses of computer networks

21. Explain the need of DNS.

22. Explain the use of microwaves transmission.

(8 × 2 = 16 Marks)

SECTION – C

Short Essay type questions. Answer any **six** questions. Each question carries **4** marks.

23. Short note on types of network.

24. Write short note on fiber optics

25. Explain various transmission modes.

26. Explain hamming code.

27. Write short note on switches.

28. Explain the use of NIC.

29. Explain any one adaptive routing algorithm.

30. Write features of network layer.

31. Write short note on SMTP.

(6 × 4 = 24 Marks)

SECTION – D

Long Essays. Answer any **two** questions. **Each** question carries **15** marks.

32. Explain various network topologies.

33. Explain various types of multiplexing.

34. Write short notes on :
    (a) ALOHA
    (b) Repeaters
    (c) Routers

35. Explain Dijikstra shortest path algorithm in detail.

———————

(2 × 15 = 30 Marks)

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Third Semester B.C.A. Degree Examination, February 2024

Career Related First Degree Programme under CBCSS

Group 2(b) – Computer Applications

Complementary Course

CP 1331 : COMPUTER GRAPHICS

(2021 Admission onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A (Very short answer type)

One word to maximum of **one** sentence. Answer **all** questions.

1. Picture definition is stored in a memory area called ————.
2. Expand SVGA.
3. The process of positioning an object along a straight line path from one coordinate point to another is called ————.
4. The 4-bit code of the bottom-region among the nine regions divided using the Cohen-Sutherland algorithm is ————.
5. Laser printer is an example for ———— printer.
6. Name the 2D transformation in which the object is rotated 180°.
7. In raster scan display, at the end of one frame, the electron beam returns to the left top corner of the screen to start the next frame is called ————.

8. The display area of the part selected or the form in which the selected part is viewed is known as ————————.

9. The process of repositioning an object along a circular path is called ————————.

10. The size of the object will be ———————— when the values of scaling factors sx < 1 and sy < 1.

(10 × 1 = 10 Marks)

SECTION – B (Short answer)

Not to exceed ***one*** *paragraph, answer any* ***eight*** *questions. Each question carries* **2** marks.

11. What is a graphics workstation?

12. Mention any four applications of computer graphics.

13. What are the disadvantages of DVST display device?

14. Mention various area filling attributes.

15. What is the need for clipping?

16. Explain pivot point rotation with an example.

17. Mention the polygon tables in computer graphics with its purpose.

18. What is window port and viewport?

19. What do you mean by 3D scaling? Write down the 3D transformation matrix for scaling.

20. What do you mean by grey scale? Mention the advantage.

21. Explain the concept of boundary fill algorithm.

22. What do you mean by 3D reflection?

(8 × 2 = 16 Marks)

SECTION – C (Short essay)

Not to exceed **120** words, answer any **six** questions. Each question carries **four** marks.

23. Briefly explain warping in computer graphics.

24. Write short notes on plasma panels.

25. Briefly explain z-buffer algorithm.

26. Explain HSV and CYMK color models.

27. Explain different types of shading.

28. Write short notes on morphing.

29. Write short notes on 3D graphics co-ordinate systems.

30. Explain wireframe models in 3D graphics.

31. Explain parallel and perspective projection.

(6 × 4 = 24 Marks)

SECTION – D (Long Essay)

Answer any **two** questions. Each question carries **15** marks.

32. Explain the working of CRT with a diagram.

33. Explain DDA line drawing algorithm.

34. Explain homogeneous coordinate system and the matrices for 2D transformation.

35. Explain Sutherland Hodgeman polygon clipping algorithm.

(2 × 15 = 30 Marks)

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Third Semester B.Sc./B.C.A. Degree Examination, February 2024

Career Related First Degree Programme under CBCSS

Group 2 (b) – Computer Science/Computer Applications

Core Course

CS 1344/CP 1343 : DATABASE MANAGEMENT SYSTEMS

(2021 Admission Onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A [Very Short Answer Type]

[One word to maximum of one sentence. Answer **all** questions]

1. DML stands for _____

2. _____ command is used to restore the database to the last committed state.

3. _____ can be a real-world object which physically exists in this world.

4. Name three levels of data abstraction.

5. _____ is the data model in which data is stored in form of objects, which are instances of classes.

6. An entity set that doesn't have sufficient attributes to form a primary key is referred to as _____ entity.

7. ACID stands for _____

8. _____ means hierarchically breaking up the database into blocks that can be locked and can be tracked needs what needs to lock and in what fashion.

9. A _____ is a unique identifier created by the DBMS to identify a transaction.

10. _____ security controls are those that restrict the access capabilities of users of the system and prevent unauthorized users from accessing the system.

(10 × 1 = 10 Marks)

SECTION – B [Short Answer]

[Not to exceed one paragraph, answer any **eight** questions. Each question carries **2** marks]

11. What do you mean by a database schema?

12. What is relational calculus?

13. What is a super key in DBMS?

14. What is a view?

15. What do you mean by a transaction?

16. What is a data model? Give two examples.

17. What do you mean by degree of a relationship type? Name the different types.

18. What do you mean by normalization? What is its purpose?

19. Write down the syntax of UNION ALL operator.

20. Explain NOT NULL constraint.

21. Explain HAVING clause with syntax and example.

22. What do you mean by authorization in DBMS?

(8 × 2 = 16 Marks)

SECTION – C [Short Essay]

[Not to exceed **120** words, answer any **six** questions. Each question carries **4** marks]

23. Explain hierarchical model of DBMS.

24. Explain the role of database designers.

25. Explain with examples

    (a) composite attribute

    (b) derived attribute

26. Explain SQL query to illustrate the usage of

    (a) LIKE operator

    (b) BETWEEN operator.

27. Explain the ALTER TABLE command for the following with syntax and example.

    (a) To DROP a column

    (b) To add a primary key constraint

28. Explain subquery with an example.

29. Explain the three-schema architecture with a diagram.

30. Explain referential integrity with an example.

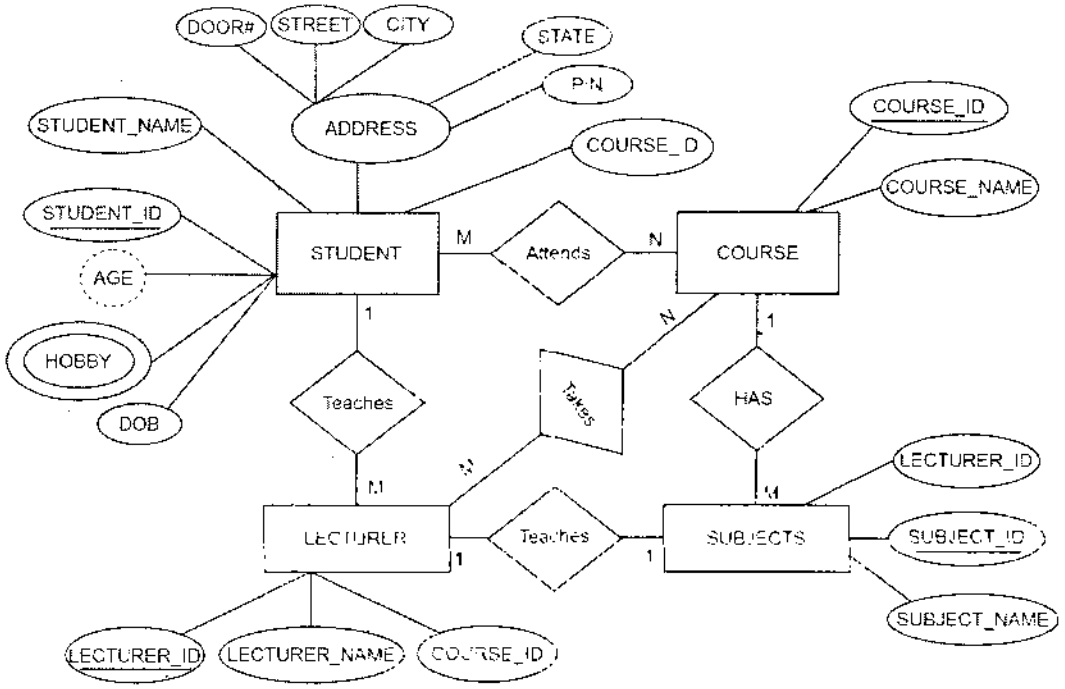
31. Explain commit point of a transaction.

(6 × 4 = 24 Marks)

SECTION – D [Long Essay]

[Answer any **two** questions. Each question carries **15** marks]

32. Convert the ER diagram to tables with necessary explanations.



33. Explain 1NF, 2NF and 3NF with examples.

34. Explain different types of JOIN with syntax and examples.

35. Explain the following.

    (a) Transaction states

    (b) Shared or exclusive locks in concurrency control.

(2 × 15 = 30 Marks)

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Third Semester B.Sc./B.C.A. Degree Examination, February 2024

Career Related First Degree Programme under CBCSS

Group 2 (b) – Computer Science/Computer Applications

Core Course

CS 1343/CP 1342 : OPERATING SYSTEMS

(2021 Admission Onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A (Very Short Answer questions)

Answer **all** questions. Each question carries **1** mark.

1. What do you mean by operating system?

2. What do you mean by preemptive scheduling?

3. What do you mean by page fault?

4. What is thrashing?

5 What do you mean by spooling?

6 Expand the term RAID.

7 List various types of Operating systems.

P.T.O.

8. What do you mean by critical section?

9. What is inter process communication?

10. What is the need of a recovery mechanism?

(10 × 1 = 10 Marks)

SECTION – B *(Brief answer questions)*

Answer any **eight** questions. Each question carries **2** marks.

11. Explain the features of real time OS.

12. Short note on system calls.

13. Write note on conditions of deadlock

14. Explain various address binding mechanisms.

15. Explain the functionalities of UNIX OS.

16. Short note on swapping.

17. Write note on demand paging.

18. Explain structure of page table.

19. What do you mean by disk management?

20. Mention uses of dynamic loading and linking.

21. Explain the term synchronisation.

22. Explain the term concurrent process.

(8 × 2 = 16 Marks)

SECTION – C (Short Essay type questions)

Answer any **six** questions. Each question carries **4** marks.

23. Short note on trends in distributed systems.

24. Write short note on semaphores.

25. Explain about time sharing OS.

26. Explain thread life cycle.

27. Write short note on process states.

28. Explain the structure of OS.

29. Explain any one non preemptive scheduling mechanism.

30. Describe disk scheduling algorithm.

31. Write short note on paging.

(6 × 4 = 24 Marks)

SECTION – D (Long Essays)

Answer any **two** questions. **Each** question carries **15** marks.

32. Explain various functions of OS in detail.

33. Explain deadlock recovery mechanisms and explain the use of RAG.

34. Write short notes on:
    (a) PCB
    (b) LRU page replacement mechanism
    (c) Kernel I/O sub system

35. Explain the concept of virtual memory in detail.

(2 × 15 = 30 Marks)

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Third Semester B.Sc./B.C.A. Degree Examination, February 2024

Career Related First Degree Programme under CBCSS

Group 2(b) – Computer Science/Computer Applications

Core Course

CS 1341/CP 1344 : PROGRAMMING IN JAVA

(2021 Admission onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A [Very Short Answer Type]

[One word to maximum of **one** sentence. Answer **all** questions]

1. Expand JVM.
2. Number of bytes taken by char data type is ————————.
3. JDK stands for ————————.
4. The built-in function for finding the length of a string is ————————.
5. The applet method drawRect() takes ———————— parameters.
6. AWT stands for ————————.
7. ———————— is the built-in exception raised when a number is divided by zero.

8. JDBC stands for ————————.

9. ———————— keyword used for invoking the base class constructor.

10. ———————— is the first method called for starting a thread.

(10 × 1 = 10 Marks)

SECTION – B [Short Answer]

[Not to exceed **one** paragraph, answer **any eight** questions. Each question carries **2** marks]

11. Name the different types of access modifiers in Java.

12. How will you avoid a class from inheritance?

13. What is a constructor?

14. How to create an object in Java?

15. Which are the different types of literals in Java?

16. What are the rules for naming a variable?

17. Explain any 2 built-in string handling methods.

18. What is an applet?

19. What do you mean by an event?

20. Explain the method drawOval() with its parameters.

21. What do you mean by input stream and output stream in Java?

22. What is a socket?

(8 × 2 = 16 Marks)

SECTION – C [Short Essay]

[Not to exceed **120** words answer **any six** questions. Each question carries **4** marks]

23. Explain various data types in Java.

24. Explain different loops used in Java.

25. Explain various operators used in Java.

26. Write a Java program to illustrate runtime polymorphism.

27. What is accept() and close() methods in socket programming?

28. Write an example program to copy a file into another.

29. How will you display images in Java?

30. Explain the concept of multithreading.

31. Explain with example how to create an applet.

(6 × 4 = 24 Marks)

SECTION – D [Long Essay]

[Answer **any two** questions. Each question carries **15** marks]

32. Explain with examples to create and initialize one dimensional and two dimensional arrays in Java.

33. Explain the concept of exception handling with examples.

34. Illustrate with example program to handle mouse events.

35. Write a package to check whether a number is prime. Import the package to find nPr and nCr.

(2 × 15 = 30 Marks)
