20100809

QP CODE: 20100809

Reg No : .....

Name : .....

B.Sc/BCA DEGREE (CBCS) EXAMINATION, MARCH 2020

Fourth Semester

Core Course - CS4CRT09 - DESIGN AND ANALYSIS OF ALGORITHMS

(Common for B.Sc Information Technology Model III,Bachelor of Computer Application)

2017 Admission onwards

87DB30BA

Time: 3 Hours Marks: 80

Part A

*Answer any **ten** questions.*

*Each question carries **2** marks.*

1. What is an algorithm?
2. Explain Space complexity.
3. Discuss the general method of divide and conquer.
4. Write the complexity of merge sort.
5. Quicksort is more efficient than mergesort. Judge your answer.
6. What is ordering paradigm?
7. Define Kruskal's algorithm.
8. What you meant by Dynamic programming with Examples?
9. Write Bellman and Ford algorithm to compute the shortest paths.
10. What is travelling sales person problem?
11. Which data structure is used for implementing BFS traversal?
12. Define biconnected component.

(10×2=20)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. Write notes on algorithm analysis.
14. With an example explain the best-case, worst-case and average-case complexities of an algorithm.
15. Demonstrate the analysis of binary search algorithm using recursive binary tree method.
16. Write the characterstics of Greedy algorithm.
17. Find an optimal solution to the knapsack instance n=4 objects and the capacity of knapsack m=15, profits(10,5,7,11) and weights are (3,4,3,5).
18. Discuss the forward approach in multistage graph problem with example.
19. Explain 0/1 knapsack problem with algorithm.
20. Explain 8-Queen's problem with an example.
21. Write algorithm to find hamiltonian path using backtracking.

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **15** marks.*

22. Elaborate various algorithm design strategies.
23. Discuss in detail about the procedure for Strassen's Matrix Multiplication. Illustrate with an example.
24. Write a note on greedy technique. Explain Prim's algorithm with example using greedy technique.
25. Explain backtracking algorithm. Apply backtracking to solve the following instance of the sum of subset problem. Set of elements = {3, 5, 6, 7} and d = 15

(2×15=30)

QP CODE: 20101020

20101020

Reg No : .....

Name : .....

BSC DEGREE (CBCS) EXAMINATION , MARCH 2020

Fourth Semester

Core Course - CS4CRT10 - LINUX ADMINISTRATION

(Common for B.Sc Computer Applications Model III Triple Main,B.Sc Computer Science Model III,B.Sc Information Technology Model III,Bachelor of Computer Application)

2017 ADMISSION ONWARDS

A1A2535C

Time: 3 Hours Marks: 80

Part A

*Answer any **ten** questions.*

*Each question carries **2** marks.*

1. What is the role of kernel?
2. What is the difference between home directory and working directory?
3. Which are the commands used to create files in Linux?
4. What are pipes?
5. What is meant by redirecting input/output?
6. What is the usage of nohup command in Linux?
7. What is shell environment?
8. Explain features of BASH shell.
9. Explain the use of chmod command.
10. Describe the use of chmod command.
11. What is the difference between grep and egrep commands?
12. What is FTP?

(10×2=20)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. What are the advantages of Linux operating system?

14. Describe ls and cd commands.

15. How Linux perform process scheduling with at and batch command?

16. What are editors? Explain vi editors.

17. Describe case statement in shell script .

18. What is command line arguments. How will you use command line arguments in a shell script.

19. Discuss the central concepts of a file system in Linux.

20. What is pr filter ? Explain with options.

21. Write short note on squid server.

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **15** marks.*

22. Explain any five file processing commands in Linux with its syntax and suitable examples.

23. a).What are the different type of shell variables in Linux? b) Write short note on shell keywords.

24. What are the roles and responsibilities of a system administrator?

25. Write short note on a) Appache b)Samba c)Telnet

(2×15=30)

QP CODE: 20101051

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Reg No : .....

Name : .....

BCA DEGREE (CBCS) EXAMINATION , MARCH 2020

Fourth Semester

Bachelor of Computer Application

Complementary Course - MM4CMT03 - OPERATIONS RESEARCH

2017 ADMISSION ONWARDS

D5ACB3CF

Time: 3 Hours Marks: 80

Part A

*Answer any **ten** questions.*

*Each question carries **2** marks.*

1. Explain the nature of operation research
2. Briefly describe some application of operation research in functional areas of management.
3. Describe any 2 limitations of OR.
4. What you mean by analogue model model.? Give any 2 examples.
5. What is a linear programming problem?
6. What are the characteristics of linear programming problems?
7. When is the solution to a LPP infeasible?
8. Distinguish between feasible solution and basic feasible solution.
9. What is a loop in Transportation problem?
10. Write the reason for unbalanced TP.
11. Define a game.
12. What is the value of the game and who will be the winner of the game.

$$\begin{bmatrix} 1 & -2 \\ 2 & -1 \end{bmatrix}$$

(10×2=20)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. Define OR. Explain the origin of OR.

14. Explain the use of OR in defence and in Industry.

15. Solve graphically the following problems

Min Z= -x+2y

Subject to $-x+3y \leq 10$

$x+y \leq 6$

$x-y \leq 2$

$x \geq 0, y \geq 0$

16. Expalin the steps followed in Bog method.

17. Determine the initial BFS of the transportation problem byVogel's approximation method.

Destinations					
Origin	A	B	C	D	Supply
1	1	5	3	3	34
2	3	3	1	2	15
3	0	2	2	3	12
4	2	7	2	4	19
Demand	21	25	17	17	

18.

Job				
Workers		x	y	z
	A	18	17	16
	B	15	13	14
	C	19	20	21

Formulate this assignment problem as an LPP.

19. Given below is a matrix showing the profit for different jobs done through different machines. Find an assignment programme which will maximize the total profit.

Machines				
	M1	M2	M3	M4
J2	51	53	54	50
J2	47	50	48	50
J3	49	50	60	61
J4	63	64	60	61

20. What is the principle of dominance and explain the modified dominance property

21. Explain two person zero sum game.

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **15** marks.*

22. A company produces two types of products say type A and B. Product B is superior quality and product A is of lower quality. Profits on the two types of products are rs. 30 and Rs. 40 respectively. The dataon resource required, and available of resources are given below:

	Requirement		Capacity
	Product A	Product B	
Raw materials (kg)	60	120	12000
Machining (hours per piece)	8	5	600
assembly(Man hour)	3	4	500

Solve using Simplex method

23. a)Explain the steps in North west corner rule.
b)Find the intial basic feasible solution of the following transportation problem using the north west corner rule

	D1	D2	D3	D4	Supply
O1	6	4	1	5	14
O2	8	9	2	7	16
03	4	3	6	2	5
Demand	6	10	15	4	35

24. a)Define transportation problem and asignment problem.
b) Distinguish between transportation and assignment problem.and write the mathematical representation of both.

25. (a) What do you ean by mixed strategy in game theory and how it is solved.
(b) Player A is paid Rs. 8 if two coins turn both head and Rs. 10 if two coins turn both tails. Plyer B is paid Rs. 3 when the two coins do not match. Given the choice of being A or B, which one would you choose and what would be your strategy.

(2×15=30)

QP CODE: 20100810

20100810

Reg No : .....

Name : .....

BCA DEGREE (CBCS) EXAMINATION, MARCH 2020

Fourth Semester

Bachelor of Computer Application

Core Course - CA4CRT03 - SYSTEM ANALYSIS AND SOFTWARE ENGINEERING

2017 Admission onwards

15A28E78

Time: 3 Hours Marks: 80

Part A

*Answer any **ten** questions.*

*Each question carries **2** marks.*

1. Define a System.
2. What are the functions of a System Analyst?
3. What is the objective of software engineering?
4. What is a software component.
5. If we have less domain knowledge(new technology) which software lifecycle model will be choosen?
6. What is Technical feasibility?
7. What do you mean by an External Entity?
8. What are internal logical files?
9. What are the parts of design process?
10. What is an object?
11. What is test case?
12. What is cyclomatic complexity?

(10×2=20)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. Explain guidelines for organization chart.

14. What is DSS? How it helps in decision making?

15. You selected RAD model. Explain the selection.

16. Explain the different symbols used in Use case diagram.

17. What do you mean by maintainability?

18. Explain the important properties of a modular system.

19. Explain the four general ways of characterising failure occurrences in time.

20. What is mutation testing?

21. Explain equivalence class testing.

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **15** marks.*

22. Write a note on increment process model.

23. Explain the various cost estimation techniques.

24. Explain about IEEE Recommended practice for software design descriptions.

25. Discuss in detail about the levels of testing.

(2×15=30)

QP CODE: 20101023

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Reg No : .....

Name : .....

BSC DEGREE (CBCS) EXAMINATION , MARCH 2020

Fourth Semester

Core Course - CS4CRT11 - WEB PROGRAMMING USING PHP

(Common for B.Sc Computer Applications Model III Triple Main,B.Sc Computer Science Model III,B.Sc Information Technology Model III,Bachelor of Computer Application)

2017 ADMISSION ONWARDS

EA6DFFA8

Time: 3 Hours Marks: 80

Part A

*Answer any **ten** questions.*

*Each question carries **2** marks.*

1. What is a protocol?
2. Write short note on tag.
3. Explain tag in HTML.
4. When is an internal CSS is used in HTML document?
5. What is the use of 'new' operator in JavaScript ?
6. What the syntax of Prompt Box in JavaScript? Explain.
7. How to start and finish a PHP block of code?
8. What are associative arrays in PHP?
9. What is the use of substr() funciton in PHP?
10. What are Cookies ?
11. What is the purpose of update command?
12. Write PHP statements to insert data into mysql table

(10×2=20)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. Write short note on text formating tags in html.

14. Explain hyperlinks in HTML document with examples.

15. Discuss CSS Font properties in detail.

16. Create a string object in JavaScript and apply any four built in String object methods.

17. How comments are used in PHP? Give example.

18. Explain operators in PHP.

19. Differentiate isset() and unset() functions in PHP.

20. Which are the error levels used in PHP?

21. Explain the features of MySql database.

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **15** marks.*

22. Explain various operators supported by JavaScript. Give examples.

23. Explain the following with examples a) branching statements in PHP b) loops in PHP.

24. How inheritance is implemented in PHP? Explain how base class methods and properties are accessed? Give example.

25. With the help of and example explain each step for accessing the data from a MySql database table.

(2×15=30)