



21102156

QP CODE: 21102156

Reg No :

Name :

BCA DEGREE (CBCS) EXAMINATION, AUGUST 2021

Third Semester

Bachelor of Computer Applications

COMPLEMENTARY COURSE - ST3CMT32 - ADVANCED STATISTICAL METHODS

2017 Admission Onwards

03DC73B9

Time: 3 Hours

Max. Marks : 80

Part A

*Answer any **ten** questions.*

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

1. What are the parameters of Normal distribution?
2. What is the mean and variance of a standard normal variable?
3. What are the conditions under which Binomial distribution tends to Normal distribution?
4. Define population and sample.
5. What is the mean of chi-square distribution?
6. How tables are prepared?
7. What are the different types of estimation?
8. What are the properties of a good estimator?
9. Write down a 90% confidence limits for population mean for a given sample mean and sample SD.
10. What are the conditions under which small sample tests are applied?
11. State the null hypothesis under goodness of fit.
12. Write down the test statistic for testing equality of mean when population SD"s are known.

(10×2=20)

Part B

*Answer any **six** questions.*

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





13. Four coins are tossed simultaneously. What is the probability of getting exactly 2 heads?
14. If a random variable X follows a Poisson distribution such that $P(X=1)=P(X=2)$. Find $P(X=0)$.
15. Obtain the mean, variance and mgf of continuous uniform distribution.
16. What are the uses of normal distribution as a sampling distribution?
17. What are the uses of t distribution?
18. A random sample of size 100 has mean 45 and sd 15. Obtain a 95% confidence interval for the population mean.
19. Obtain a confidence interval for variance of a normal population.
20. The mean life of 100 fluorescent light tubes produced by a company is computed to be 1570 hours with SD of 120 hours. The company claims that the average life of the tubes produced by the company is 1600 hours. Using the level of significance of 0.05, Is the claim acceptable?
21. Explain chi-square test as a non parametric test.

(6×5=30)

Part C

*Answer any **two** questions.*

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

22. Obtain the mean, variance and mgf of Bernoulli distribution.
23. Briefly explain various sampling distributions. What are their uses.
24. Derive the confidence interval for true value of proportion of binomial population.
25. Explain the steps involved in hypothesis testing.

(2×15=30)





21102128

QP CODE: 21102128

Reg No :

Name :

B.Sc /BCA DEGREE (CBCS)EXAMINATION, AUGUST 2021

Third Semester

Core Course - CS3CRT08 - DATA STRUCTURE USING C++

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

2017 Admission Onwards

1C6149B6

Time: 3 Hours

Max. Marks : 80

Part A

*Answer any **ten** questions.*

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

1. What are arrays? Describe with example.
2. How can you calculate number of passes in insertion sort?
3. Describe stack overflow and stack underflow.
4. State the differences between linear queues and circular queues.
5. What are the applications of linked list?
6. What are the three instances of deleting a node from a linked list.
7. Define doubly linked list.
8. What is forest in tree terminology ?
9. Create a binary tree for the expression $A+(B+C*D+E)+F/G$.
10. Write short note on structure of linked file organization.
11. What is hashing?
12. How collisions are occurred in hash tables?

(10×2=20)

Part B

*Answer any **six** questions.*

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





13. Discuss non-primitive data structures .
14. Explain polynomial representation using array.
15. Explain applications of stacks.
16. Explain priority queues and describe various operations performed on them.
17. Explain the applications of linked stack and linked queue.
18. Describe the term "Garbage collection".
19. Explain how to delete a node from binary tree.
20. Explain insertion of a node in binary search tree with algorithm.
21. List various file operations. Explain each one.

(6×5=30)

Part C

*Answer any **two** questions.*

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

22. Explain binary search. Suppose we have an array of 6 elements 9,12,24,30,45,70.Explain the steps to search an element 45 within the array using binary search.
23. Explain operations performed on queues and limitations of linear queues.
24. Explain different structures / types of binary tree with example .
25. What are the different types of file organizations? Explain in detail about sequential and random files.

(2×15=30)



21101924



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Reg. No.....

Name.....

B.C.A. DEGREE (C.B.C.S.) EXAMINATION, AUGUST 2021

Third Semester

Bachelor of Computer Application

Core Course : CA 3CR T01—MICROPROCESSOR AND PC HARDWARE

(2017 Admission onwards)

Time : Three Hours

Maximum Marks : 80

Part A

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

1. What is the function of program counter in 8085 microprocessor ?
2. What is trap interrupt and its significance ?
3. What are the types of addressing mode in 8085 microprocessor ?
4. What are the flags available in 8085 processor ?
5. Specify the size of data, address, memory word and memory capacity of 8085 microprocessor.
6. State the functions of BIOS.
7. Mention the types of RAM Packages.
8. Describe the use of address bus, data bus, and control bus.
9. Write any four features of PCI bus.
10. Write any two features each of FAT32 and NTFS File System.
11. What is USB ?
12. List the features of SIMMs.

(10 × 2 = 20)

Part B

*Answer any six questions.
Each question carries 5 marks.*

13. Draw and explain the timing diagram of memory write cycle with example.
14. Explain the following instructions with suitable example of each :
 - (i) LXI.
 - (ii) STA.
 - (iii) SHLD.
 - (iv) LDAX.
 - (v) CMP.

Turn over





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15. Explain the sequence of events during the execution of the CALL instruction by 8085 processor with the help of neat timing diagram.
16. Write short note on vectored interrupts of 8085 microprocessor.
17. Discuss the primary functions of the motherboard and list out their various form factors.
18. Write a note on expanded memory.
19. Write briefly about tracks, sectors and cylinders in hard disk.
20. Write a note on system buses.
21. Define co-processor and explain about math co-processor.

(6 × 5 = 30)

Part C

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

22. With the help of pin diagram explain the operations of 8085 microprocessor.
23. Explain the operations carried out when 8085 executes the instructions :
 - (i) MOV A, M
 - (ii) XCHG.
 - (iii) DAD B.
 - (iv) DAA.
24. Discuss the various components of a motherboard with the help of a diagram.
25. Explain the Hard disk operations and Hard disk drive installation procedure in detail.

(2 × 15 = 30)





21101923

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Reg No :

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B.Sc / BCA DEGREE (CBCS) EXAMINATION, AUGUST 2021

Third Semester

Core Course - CS3CRT07 - COMPUTER GRAPHICS

Common to Bachelor of Computer Application & B.Sc Information Technology Model III

2017 Admission Onwards

86487141

Time: 3 Hours

Max. Marks : 80

Part A

*Answer any **ten** questions.*

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

1. What is aspect ratio in display?
2. What do you mean by scan conversion?
3. What are attributes?
4. Draw the symmetry of circle by plotting point, say (2,5)?
5. Define Typeface.
6. Write short note on reflection.
7. Explain viewing transformation.
8. Define clipping. What are the different types of clipping?
9. Define Sweep Representation, give figures.
10. What is Ray-casting method?
11. What is meant by key frame specification?
12. Discuss about various computer animation functions.

(10×2=20)

Part B

*Answer any **six** questions.*

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





13. Explain the working of 3D display system using vibrating mirror.
14. Use DDA Algorithm and generate a line , whose points are given as (10,15),(15,25)
15. Using Bresenham's Line Drawing Algorithm , digitize the line with endpoints (20,10) and (30,18)
16. Write short note on reflection and shear.
17. Write the four cases of polygon clipping against one edge.
18. Briefly explain Depth cueing,Visible Line Identification,Surface Rendering in detail.
19. Explain Quadtrees in detail.
20. Discuss about various computer animation languages.
21. Describe about different motion specifications.

(6×5=30)

Part C

*Answer any **two** questions.*

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

22. Explain various applications of Computer Graphics in detail.
23. Explain various interactive picture construction techniques.
24. Explain Polygon Surfaces and Polygon tables,illustrate with figures.
25. Briefly explain about morphing with suitable examples.

(2×15=30)





21101925

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Reg No :

Name :

BCA DEGREE (CBCS) EXAMINATION, AUGUST 2021

Third Semester

Bachelor of Computer Application

CORE COURSE - CA3CRT02 - OPERATING SYSTEMS

2017 Admission Onwards

F8FE8D62

Time: 3 Hours

Max. Marks : 80

Part A

*Answer any **ten** questions.*

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

1. What do you mean by Time sharing OS?
2. What is a command interpreter?
3. Explain synchronization.
4. Explain preemptive and non-preemptive scheduling.
5. List out the different types of Scheduling Algorithms.
6. Give the general structure of a process to execute its critical section.
7. What are the necessary conditions for a deadlock?
8. What is compile time address binding ?
9. What is segmentation ?
10. What is meant by page replacement ?
11. What is meant by direct access ?
12. What is meant by grouping?

(10×2=20)

Part B

*Answer any **six** questions.*

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





13. What are the components of a computer system?
14. Write a short note on System calls.
15. Explain process control block with a neat diagram.
16. Explain process creation and process termination.
17. Explain Semaphore.
18. Explain the dining philosophers problem of synchronization.
19. What is a monitor? Briefly explain.
20. Explain the concept of virtual memory.
21. Explain different types of allocation methods.

(6×5=30)

Part C

*Answer any **two** questions.*

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

22. Explain
(a) OS Operations (b) OS Services
23. Explain about Process Scheduling.
24. Explain deadlock detection.
25. Explain paging hardware.

(2×15=30)

