



QP CODE: 22100510

Reg No :

Name :

**BCA DEGREE (CBCS) REGULAR / REAPPEARANCE EXAMINATIONS,
APRIL 2022**

Third Semester

Bachelor of Computer Applications

CORE COURSE - CA3CRT02 - OPERATING SYSTEMS

2017 Admission Onwards

51F4D48C

Time: 3 Hours

Max. Marks : 80

Part A

*Answer any **ten** questions.*

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

1. Write about the evolution of OS.
2. What is a command interpreter?
3. Explain process states.
4. What you mean by process termination?
5. Explain CPU scheduler.
6. What are the requirements for critical section?
7. Write the syntax of a monitor.
8. What is address binding?
9. What is segmentation ?
10. Define pagefault.
11. What is meant by counting ?
12. What is meant by disk scheduling ?

(10×2=20)





Part B

Answer any **six** questions.

Each question carries **5** marks.

13. What do you mean by Job management and Device management?
14. Discuss about OS Operations.
15. Write a note on context switch in detail.
16. Explain the process of message passing in IPC.
17. Discuss about bounded buffer problem of synchronization.
18. Discuss about the necessary conditions for a deadlock.
19. Explain resource-allocation graph algorithm for deadlock avoidance.
20. Explain optimal page replacement.
21. Explain access methods.

(6×5=30)

Part C

Answer any **two** questions.

Each question carries **15** marks.

22. Explain types of system calls.
23. Briefly explain the types of Scheduling Algorithm with example.
24. What is deadlock detection and recovery? Explain.
25. Explain paging hardware .

(2×15=30)





QP CODE: 22100760

22100760

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BCA DEGREE (CBCS)REGULAR / REAPPEARANCE EXAMINATIONS, APRIL 2022

Third Semester

Bachelor of Computer Applications

COMPLEMENTARY COURSE - ST3CMT32 - ADVANCED STATISTICAL METHODS

2017 Admission Onwards

D2684240

Time: 3 Hours

Max. Marks : 80

Part A

*Answer any **ten** questions.*

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

1. Obtain the expression for mean of a Poisson distribution.
2. Obtain the mean of uniform distribution in continuous setup.
3. What are the conditions under which Binomial distribution tends to Normal distribution?
4. What are the commonly used sampling distributions?
5. Point out some uses of F distribution.
6. What is the relation between Normal and a t variable?
7. Define point estimation.
8. Define efficiency.
9. What is the confidence interval for population variance in sampling from normal population?
10. Define composite hypothesis.
11. What are the uses of chi-square test?
12. Write down the test statistic used when goodness of fit is applied.

(10×2=20)

Part B

*Answer any **six** questions.*

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





13. If X is a Bernoulli variate taking values 1 or 0 with probabilities 0.6 and 0.4 respectively. Find the mean and variance.
14. The weekly wages of 1000 work men are normally distributed with a mean of 70 and SD of 5. Estimate the number of workers whose wages will be between 69 and 72.
15. In a Normal distribution 17% of the items are below 30 and 17% of the items are above 60. Find the mean & Standard deviation.
16. What are the properties of chi-square distribution?
17. Write down the pdf of t distribution.
18. Find the m.l estimate of a and b in $U(a,b)$
19. Derive the confidence interval for proportion of a Binomial population.
20. Explain the procedure for testing independence of attributes.
21. In two colleges affiliated to a university 46 out of 200 and 48 out of 250 candidates failed in an examination. If the percentage of failure in the university is 18 % ,examine whether the colleges differ significantly.

(6×5=30)

Part C

Answer any **two** questions.

Each question carries **15** marks.

22. Write notes on Binomial distribution. What are its properties? What is its importance?
23. Explain sampling distribution with example.
24. Obtain confidence interval for mean of a normal population when population SD is unknown.
25. A sample of 400 men from South India has a mean height of 65.85 inches and a SD of 2.50 inches while a sample of 100 men from North India has a mean height of 66.20 inches with a SD of 2.52 inches. Do the data indicate that North Indian's are on the average taller than South Indian's.

(2×15=30)





QP CODE: 22100508



22100508

Reg No :

Name :

**B.Sc / BCA DEGREE (CBCS) REGULAR / REAPPEARANCE EXAMINATIONS,
APRIL 2022**

Third Semester

Core Course - CS3CRT07 - COMPUTER GRAPHICS

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

2017 Admission Onwards

AB2AEB2C

Time: 3 Hours

Max. Marks : 80

Part A

*Answer any **ten** questions.*

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

1. List the merits and demerits of DVST.
2. Compare Raster scan and Random scan displays.
3. Differentiate between passive matrix and active matrix LCD displays.
4. What is the disadvantage of DDA Algorithm?
5. Compare Bitmap and Outline font.
6. Interpret the need of composite transformation.
7. Differentiate window and viewport.
8. What is point clipping, what is the condition for clipping?
9. Discuss about stereoscopic views.
10. Define space-partitioning representations.
11. Write a note on raster animation.
12. How does scripting system works?

(10×2=20)

Part B

*Answer any **six** questions.*

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





13. Briefly describe about various hard copy devices.
14. What is Bresenham's Line Drawing Algorithm? Illustrate with appropriate figure.
15. Construct a circle with radius 10, using Midpoint Circle Algorithm.
16. Compare rotation and scaling.
17. Distinguish grid and gravity field.
18. Explain CSG with the help of figures.
19. Explain Octrees in detail.
20. What is the difference of keyframe systems from parameterized systems?
21. Explain about different motion specifications.

(6×5=30)

Part C

*Answer any **two** questions.*

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

22. Summarize various applications of Computer Graphics in detail.
23. Describe Cohen Sutherland line clipping algorithm with examples.
24. Explain Sweep representation and CSG in detail with proper figures.
25. List and explain various steps involved in the design of animation sequence.

(2×15=30)





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**BCA DEGREE (CBCS) REGULAR / REAPPEARANCE EXAMINATIONS,
APRIL 2022**

Third Semester

Bachelor of Computer Applications

CORE COURSE - CA3CRT01 - MICROPROCESSOR AND PC HARDWARE

2017 Admission Onwards

841303EC

Time: 3 Hours

Max. Marks : 80

Part A

*Answer any **ten** questions.*

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

1. Define instruction cycle.
2. What is the function of Program counter?
3. Name the different types of instructions in the instruction set of 8085 .
4. Explain instruction format of 8085?
5. Define stack and stack related instruction.
6. What is AGP ?
7. Define processor socket .
8. What is processor bus ?
9. What do you mean by sputtering process ?
10. What are the head actuator mechanisms in HDD ?
11. What are the advantages of VFAT over FAT ?
12. Define memory module .

(10×2=20)

Part B

*Answer any **six** questions.*

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





13. Explain briefly the registers in 8085 microprocessor.
14. Discuss about the status flags of Intel 8085.
15. Define addressing mode and describe the addressing modes of Intel 8085 .
16. What is POST and Bootstrap loader ? Explain .
17. Chipset is the motherboard itself . Comment.
18. Explain the criteria for motherboard selection .
19. Differentiate low-level formatting and high-level formatting.
20. Compare and contrast FAT and FAT32 .
21. Explain the advantages and limitations of RIMM compared to other type of memory modules.

(6×5=30)

Part C

*Answer any **two** questions.*

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

22. Explain the pin diagram of Intel 8085 .
23. Define expansion slots and explain any three types of expansion slots in detail .
24. Explain the hard disk operations .
25. Discuss about each one
(a) Conventional memory (b) UMA (c) HMA

(2×15=30)





22100730

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**B.Sc /BCA DEGREE (CBCS) REGULAR / REAPPEARANCE EXAMINATIONS, APRIL
2022**

Third Semester

Core Course - CS3CRT08 - DATA STRUCTURE USING C++

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

2017 Admission Onwards

EA742508

Time: 3 Hours

Max. Marks : 80

Part A

*Answer any **ten** questions.*

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

1. Define linked list.
2. How many number of elements are in array A[-1 : 25] ?
3. Define stacks.
4. Define circular queues.
5. What are the advantages and disadvantages of a Singly linked list?
6. What is a doubly linked list?
7. What do you mean by linked stack and linked queue?
8. What you meant by depth of a tree ?
9. What is complete binary tree?
10. What are the two approaches to implement indexes in indexed sequential files?
11. What is linked file organization?
12. What is hash table?

(10×2=20)





Part B

Answer any **six** questions.

Each question carries **5** marks.

13. Discuss the difference between sparse matrix and normal matrix.
14. Compare and contrast linear search and binary search techniques.
15. Define queues and explain different types of queues?
16. Describe the operations performed on double ended queues?
17. Briefly explain linked list. Explain the different operations performed on a linked list.
18. Explain garbage collection.
19. What are binary trees? Describe different types of binary trees?
20. Create a binary search tree using given elements through step by step procedure :
10,12,5,4,20,8,7,15,13
21. Define the following terminologies with examples :
a)Field b)Record c)File d)Index

(6×5=30)

Part C

Answer any **two** questions.

Each question carries **15** marks.

22. Discuss insertion sort algorithm. Use insertion sort mechanism to sort the list:
25,15,30,9,99,20,26
23. What you meant by subprograms calls and execution?
24. Explain Binary tree traversals with examples and it's traversed diagrams.
25. How collision is occurred? Explain collision resolving methods used for hashing?

(2×15=30)

