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Roll No.....

C-602

BCA III Semester Examinations (June 2026)

Data Structures (BCA-207A)

Time- 3hrs

Max.Marks-60

Attempt 5 questions in all by selecting one question from each unit. Question 1 is compulsory and each Question carries 12 marks.

Q.1	Marks
(a) Define data structures.	2
(b) What is an algorithm?	2
(c) Define asymptotic notation.	2
(d) What is an array?	2
(e) Define stack.	2
(f) What is a queue?	2

UNIT-I

Q.2(a)	Explain types of data structures with examples.	6
Q.2(b)	Discuss asymptotic analysis and Big-O notation.	6
Q.3	Explain Abstract Data Types (ADT) and relationship between data, data structures, and algorithms.	12

UNIT-II

Q.4	Explain array representation in memory and operations like insertion and deletion.	12
Q.5(a)	Explain sparse matrices and their representation.	6
Q.5(b)	Discuss different string operations.	6

UNIT-III

Q.6	Explain stack representation using arrays and its applications.	12
Q.7(a)	Explain circular queue.	6
Q.7(b)	Discuss priority queue.	6

UNIT-IV

Q.8	Explain linked lists and their types.	12
Q.9(a)	Explain linear and binary search.	6
Q.9(b)	Compare sorting techniques.	6

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C 604

BCA III Semester Examinations (June 2026)

Programming with Java (BCA-205A)

Time: 3 Hrs

Max. Marks: 60

Attempt 5 questions in all by selecting one question from each unit. Question 1 is compulsory and each Question carries 12 marks.

	Marks
Q.1	
(a) Define Java Virtual Machine.	2
(b) What is the use of 'return' statement in Java?	2
(c) What is role of 'this' keyword in Java?	2
(d) Describe 'private' and 'protected' access modifiers.	2
(e) List four important packages in Java.	2
(f) Define 'Runnable' interface in multithreading.	2
UNIT-I	
Q.2(a) Explain the use of 'break' and 'continue' statement within a loop. Give example in Java with output.	6
Q.2(b) Explain various data types in Java with examples.	6
Q.3(a) Differentiate between 'for' and 'while' loop control statement in Java.	7
Q.3(b) Write a Java program to find the smallest number in an array of ten integer numbers.	5
UNIT-II	
Q.4(a) Explain Method overloading with example in Java.	6
Q.4(b) Describe 'static' and 'final' access modifiers in Java.	6
Q.5(a) Why do we use constructor and destructor function in a class in Java? Give suitable example.	5
Q.5(b) What is Inheritance? How Multiple Inheritance is implemented in Java? Give any example.	7
UNIT-III	
Q.6(a) Explain the use of 'finally' block in Exception	5
Q.6(b) Describe the use of 'throw' and 'throws' keywords in Exception handling.	7
Q.7(a) How exceptions are handled in Java? Write a Java program to handle 'ArithmeticException' of division by zero.	8
Q.7(b) How a user created exception is handled in Java? Give example.	4
UNIT-IV	
Q.8(a) Explain the lifecycle of a Thread with example in Java.	7
Q.8(b) Write a Java program to copy the contents of one file to another file using FileInputStream and FileOutputStream.	5
Q.9(a) Discuss Object serialization and de-serialization.	6
Q.9(b) Explain Thread priorities. How priority of a Thread can be set and got?	6

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D 602
BCA IV Semester Examinations (June 2026)
Animation (BCA-204A)

Time- 3hrs
Max.Marks-60

Attempt 5 questions in all by selecting one question from each unit. Question 1 is compulsory and each Question carries 12 marks.

Q.1		Marks
(a)	List any two stages in the evolution of animation.	2
(b)	What is the difference between a "Frame" and a "Keyframe"?	2
(c)	Explain the importance of sketching in 2D animation.	2
(d)	Describe the process of scanning in animation workflow.	2
(e)	Define "Frame Rate" (FPS) and its impact on animation smoothness.	2
(f)	Define animation interface.	2
UNIT-I		
Q.2(a)	Differentiate between traditional animation and computer animation.	6
Q.2(b)	Analyze the advantages and limitations of both approaches.	6
Q.3	Explain the key principles of animation such as squash and stretch, timing, anticipation, staging, and follow-through. Analyze their importance in creating realistic animations	12
UNIT-II		
Q.4	Explain the process of scanning in animation. Discuss its role in converting traditional drawings into digital format.	12
Q.5(a)	Explain the composition of basic elements in drawing (line, shape, color, texture).	6
Q.5(b)	Analyze how proper composition improves visual appeal.	6
UNIT-III		
Q.6	Describe storyboarding and visual storytelling. Explain how they help in planning animation or multimedia projects.	12
Q.7(a)	Explain the concept of "Layers" in Adobe Photoshop and how they are utilized for animation frames.	6
Q.7(b)	What is "Professional Image Manipulation"? Provide examples of tools used for this purpose in Photoshop.	6
UNIT-IV		
Q.8	Describe various drawing tools used in animation software. Analyze how these tools contribute to creating effective designs.	12

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- Q.9(a)** Discuss the technical requirements and creative steps involved in making a short-
animated clip project. **8**
- Q.9(b)** Explain how Motion Tweens help in reducing the workload of an animator. **4**

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D 603

BCA IV Semester Examinations (June 2026)
High Performance Networks (BCA-252A)

Time- 3hrs
Max.Marks-60

Attempt 5 questions in all by selecting one question from each unit. Question 1 is compulsory and each Question carries 12 marks.

Q.1		Marks
(a)	Define throughput and latency.	2
(b)	Differentiate between packet switch and circuit switching.	2
(c)	Explain Cut-through switching.	2
(d)	Define DWDM technology.	2
(e)	State the purpose of Token Bucket algorithms.	2
(f)	Define SDN and NFV.	2
UNIT-I		
Q.2(a)	Compute the transmission delay for a 2 MB packet transmitted over a communication link having bandwidth 20 Mbps. Further calculate the delay bandwidth increases to 40 Mbps.	6
Q.2(b)	Discuss various network performance metrics with example.	6
Q.3	Compare broadband ISDN, SONET/SDH and Gigabit Ethernet technologies with their applications.	12
UNIT-II		
Q.4	Explain Store-and -Forward, Cut-through and Fast packet switching with suitable diagrams.	12
Q.5(a)	Explain ATM architecture and its advantages.	6
Q.5(b)	Discuss LTE and 5G technologies used in high-speed networking.	6
UNIT-III		
Q.6	Explain causes and effects of congestion in network. Discuss Leaky Bucket and Token Bucket algorithms.	12
Q.7(a)	Explain TCP/IP flow control mechanism.	6
Q.7(b)	Differentiate IntServ and Diffserv QoS models.	6
UNIT-IV		
Q.8	Explain MPLS architecture and discuss its benefits in high-performance networking.	12
Q.9(a)	Describe Software Defined Networking (SDN).	6
Q.9(b)	Discuss Edge computing and IoT networking trends.	6
