

**SIXTH SEMESTER U.G. DEGREE EXAMINATION, MARCH 2022**

(CBCSS—UG)

B.C.A.

BCA 6B 16. (E)—FUNDAMENTALS OF LIFE SKILL EDUCATION

(2019 Admissions)

Time : Two Hours

Maximum : 60 Marks

**Section A (Short Answer Type Questions)***Answer at least eight questions.**Each question carries 3 marks.**All questions can be attended.**Overall Ceiling 24.*

1. Define soft skill.
2. What is Feedback ?
3. Define Conflict.
4. Define Noise.
5. Define Guidance.
6. What is social intelligence ?
7. Discuss the different types of communication.
8. Write a note on self awareness.
9. What is critical thinking ?
10. What are the types of stress ?
11. What are the benefits of self-management ?
12. What are the objectives of coaching ?

(8 × 3 = 24 marks)

**Turn over**

**Section B (Short Essay Type Questions)**

*Answer at least five questions.*

*Each question carries 5 marks.*

*All questions can be attended.*

*Overall Ceiling 25.*

13. The goal of the life skills approach is to promote healthy, sociable behaviour. Comment.
14. Write a note on positive and negative self talk.
15. What is the process of communication ?
16. What are five things that should be included on a resume ?
17. What is the purpose of self management ?
18. What does Research say about the Outcomes of Life Skills-Based Education ?
19. What are the principles of good communication ?

(5 × 5 = 25 marks)

**Section C (Essay Type Questions)**

*Answer any one question.*

*The question carries 11 marks.*

20. Write an essay on 'Need of technology in communication'.
21. Discuss the role of life skills in education.

(1 × 11 = 11 marks)

**SIXTH SEMESTER U.G. DEGREE EXAMINATION, MARCH 2022**

(CBCSS-UG)

B.C.A.

BCA 6B 16 (D)—TECHNICAL WRITING

(2019 Admissions)

Time : Two Hours

Maximum : 60 Marks

**Section A***Answer atleast **eight** questions.**Each question carries 3 marks.**All questions can be attended.**Overall ceiling 24.*

1. What is encoding ?
2. What role does feedback play in the process of communication ?
3. What is a technical proposal ?
4. What is the importance of a conference ?
5. Write two barriers to effective communication.
6. What do you mean by voice dynamics ?
7. What is group discussion ?
8. What is a Memo ?
9. What do you understand from the term Kinesics ?
10. What do you mean Tender Notice ?
11. What are the essentials of a good business letter ?
12. What are the advantages of written communication over oral communication ?

(8 × 3 = 24 marks)

**Turn over**

**Section B**

*Answer atleast five questions.*

*Each question carries 5 marks.*

*All questions can be attended.*

*Overall ceiling 25.*

13. Write a technical letter to the newspaper editor regarding printing mistakes in the newspaper
14. "Communication means the process of passing information and understanding from one person to another". Explain.
15. What do you mean by basic technical writing ? How important is technical communication ?
16. Explain the main barriers of communication.
17. Discuss the role of Fax, email and video conferencing in communication.
18. What are the Uses of internet ?
19. What are the various steps involved in conducting an interview ? Explain.

(5 × 5 = 25 marks)

**Section C**

*Answer any one questions.*

*The question carries 11 marks.*

20. Define Communication. Write Essentials of Good Communication.
21. Draft a job application for the post of an Accounts Officer in a leading MNC, as advertised in a leading national daily.

(1 × 11 = 11 marks)

**SIXTH SEMESTER U.G. DEGREE EXAMINATION, MARCH 2022**

(CBCSS-UG)

B.C.A

BCA 6B 16 (C)—SOFTWARE TESTING AND QUALITY ASSURANCE

(2019 Admissions)

Time : Two Hours

Maximum : 60 Marks

**Section A***Answer atleast **eight** questions.**Each question carries 3 marks.**All questions can be attended.**Overall ceiling 24.*

1. Explain the difference between quality assurance and quality control
2. Write the difference between verification and validation.
3. Define Integration Testing.
4. Why do you need Software Testing Metrics ?
5. Define Static Testing.
6. Define Sanity Testing.
7. Define Regression Testing.
8. Define product metrics.
9. How Prototyping model differs from the RAD Model ?
10. Define structural testing.
11. Explain Top-Down and Bottom-Up Integration.
12. Write any *four* differences between Black Box testing and White Box testing.

(8 × 3 = 24 marks)

**Section B***Answer atleast **five** questions.**Each question carries 5 marks.**All questions can be attended.**Overall ceiling 25.*

13. What is Software Testing Metric ? Explain different types of test metrics.
14. Explain the difference between functional and non-functional testing.

**Turn over**

15. Explain different phases of a software project.
16. Explain Waterfall Model in detail.
17. Discuss the methods to achieve static testing.
18. Explain Test Process in detail.
19. Explain different Black Box Testing techniques.

(5 × 5 = 25 marks)

### Section C

*Answer any **one** questions.*

*Each question carries 11 marks.*

20. Explain different types of integration testing in detail.
21. Define Performance Testing. Explain the methodology for Performance Testing.

(1 × 11 = 11 marks)

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**SIXTH SEMESTER U.G. DEGREE EXAMINATION, MARCH 2022**

(CBCSS—UG)

B.C.A.

BCA 6B 16 (B)—MACHINE LEARNING

(2019 Admissions)

Time : Two Hours

Maximum : 60 Marks

**Section A***Answer at least **eight** questions.**Each question carries 3 marks.**All questions can be attended.**Overall Ceiling 24.*

1. What is inner product space ?
2. Define Euclidean space.
3. Explain Vector spaces ?
4. What do you mean Random Variables ?
5. Define supervised learning ?
6. What is Classification ?
7. What is Clustering ?
8. Explain dimensionality reduction ?
9. What is Regression ?
10. What is parametric classification ?
11. What is density estimation method ?
12. Explain the features of learning system ?

(8 × 3 = 24 marks)

**Turn over**

**Section B**

*Answer at least five questions.*

*Each question carries 5 marks.*

*All questions can be attended.*

*Overall Ceiling 25.*

13. Briefly explain the concept of Metric spaces
14. What do you understand by the term orthogonal projection ?
15. Explain Bayes Rule in detail.
16. Give a detailed description about classification using decision tree ?
17. What is K-means clustering ?
18. Explain the difference between Univariate Trees and Multivariate trees ?
19. Explain the concept of Maximum Likelihood Estimation ?

(5 × 5 = 25 marks)

**Section C**

*Answer any one question.*

*The question carries 11 marks.*

20. Differentiate between Parametric and Non-Parametric methods for regression.
21. Explain the different clustering methods.

(1 × 11 = 11 marks)



**SIXTH SEMESTER U.G. DEGREE EXAMINATION, MARCH 2022**

(CBCSS-UG)

B.C.A.

BCA 6B 16 (A)—SYSTEM SOFTWARE

(2019 Admissions)

Time : Three Hours

Maximum : 80 Marks

**Section A***Answer atleast eight questions.**Each question carries 3 marks.**All questions can be attended.**Overall ceiling 24.*

1. Define System Software.
2. Define Compiler.
3. Define Relocation.
4. Define Lexical analysis.
5. Define Overlay.
6. Define Interpreter.
7. Define YAAC.
8. Define Symbol table.
9. Define Linker.
10. Define Macro Processor.
11. Define Loader.
12. Define Macro.

(8 × 3 = 24 marks)

**Section B***Answer atleast five questions.**Each question carries 5 marks.**All questions can be attended.**Overall ceiling 25.*

13. Write the role of Loader and Linker in the language processing system.
14. Explain static linking and dynamic linking in detail.

**Turn over**

15. Explain different types of parsing in detail.
16. Explain global and local optimization in detail.
17. Explain the principle sources of code optimization.
18. Define Assembler. Explain different data structures used in an assembler.
19. Differentiate between Absolute loader and Relocating loader.

(5 × 5 = 25 marks)

### Section C

*Answer any **one** questions.*

*Each question carries 11 marks.*

20. Differentiate various techniques used for machine independent and dependent optimizations.
21. Define macros. Explain how to design a macro pre-processor.

(1 × 11 = 11 marks)

**SIXTH SEMESTER U.G. DEGREE EXAMINATION, MARCH 2022**

(CBCSS–UG)

B.C.A.

BCA 6B 13—COMPUTER NETWORKS

(2019 Admissions)

Time : Two Hours

Maximum : 60 Marks

**Section A***Answer atleast **eight** questions.**Each question carries 3 marks.**All questions can be attended.**Overall ceiling 24.*

1. What are the advantages of a multipoint connection over a point-to-point connection ?
2. Explain Hash function.
3. Explain Subnetting.
4. Explain different uses of UDP protocol.
5. What are the functions of FTP and TFTP ?
6. Explain the advantages of bus topology.
7. Explain about Internetworking Protocol.
8. Compare ARP and RARP.
9. Explain different component of a packet switch.
10. Explain Cryptography in detail.
11. Explain the services defined by IEEE 802.11 standard for wireless LANs.
12. What is the purpose of DHCP ?

(8 × 3 = 24 marks)

**Turn over**

**Section B**

*Answer atleast five questions.*

*Each question carries 5 marks.*

*All questions can be attended.*

*Overall ceiling 25.*

13. Explain responsibilities of transport layer and network layer in OSI model.
14. Explain circuit switching in detail.
15. Define random access and list protocols in this category.
16. Explain Address Mapping in detail.
17. Explain UDP in detail.
18. Give a detailed explanation about RSA Digital Signature Scheme.
19. Explain substitution and transposition method of symmetric key cipher.

(5 × 5 = 25 marks)

**Section C**

*Answer any one questions.*

*Each question carries 11 marks.*

20. Give a detailed explanation about CRC.
21. Explain Link State Routing.

(1 × 11 = 11 marks)

**SIXTH SEMESTER U.G. DEGREE EXAMINATION, MARCH 2022**

(CBCSS—UG)

B.C.A.

BCA 6B 12—OPERATING SYSTEMS

(2019 Admissions)

Time : Two Hours

Maximum : 60 Marks

**Section A (Short Answer Type Questions)***Answer at least eight questions.**Each question carries 3 marks.**All questions can be attended.**Overall Ceiling 24.*

1. What is the function of an operating system ?
2. Define an operating system.
3. Explain serial processing with example ?
4. What do you mean shell programming ?
5. What do understand by the term Bash ?
6. Mention any *two* iterative command in linux.
7. What is CPU Scheduling ?
8. Explain Process scheduling with example.
9. What is Overlay ?
10. What is Page replacement and explain its advantage ?
11. Differentiate between authentication and authorization.
12. Explain the features of mobile OS ?

(8 × 3 = 24 marks)

**Turn over**

**Section B**

*Answer at least five questions.*

*Each question carries 5 marks.*

*All questions can be attended.*

*Overall Ceiling 25.*

13. Briefly explain the scope of Priority scheduling.
14. What do you understand by the term thread ?
15. Explain the scheduling criteria in detail.
16. Give a description about classical synchronization problem with example.
17. Explain client server system with example.
18. Explain the difference between paging and segmentation.
19. Explain the concept of virtual memory.

(5 × 5 = 25 marks)

**Section C**

*Answer any one question.*

*The question carries 11 marks.*

20. Explain critical section problem in detail.
21. Explain the UNIX Operating system with its features.

(1 × 11 = 11 marks)

**SIXTH SEMESTER U.G. DEGREE EXAMINATION, MARCH 2022**

(CBCSS—UG)

B.C.A.

BCA 6B 11—ANDROID PROGRAMMING

(2019 Admissions)

Time : Two Hours

Maximum : 60 Marks

**Section A***Answer at least **eight** questions.**Each question carries 3 marks.**All questions can be attended.**Overall Ceiling 24.*

1. What is ADT stands for ?
2. What is the purpose of AndroidManifest.xml ?
3. What are the different types of layout managers ?
4. What is AVD and Emulator ?
5. Why do we need fragments in Android ?
6. How does toast work in android ?
7. What is base class of Android database?
8. What are the uses of spinner control in android ?
9. What is Intent in Android ?
10. What are Android Java packages ?
11. Name the different types of UI controls available in Android ?
12. What are the elements of Android software stack ?

(8 × 3 = 24 marks)

**Turn over**

**Section B**

*Answer at least five questions.*

*Each question carries 5 marks.*

*All questions can be attended.*

*Overall Ceiling 25.*

13. Define the structure of Android application.
14. Explain cursor in Android SQLite with example.
15. How to Create and Add Data to SQLite Database in Android ?
16. Explain the Activity life cycle in Android.
17. Briefly explain the working of intent in android with example.
18. Explain persist file in Android in detail.
19. Explain the life cycle of fragment in Android.

(5 × 5 = 25 marks)

**Section C**

*Answer any one question.*

*The question carries 11 marks.*

20. Write short note on any five Android menus.
21. Explain the database manipulation using SQLite ?

(1 × 11 = 11 marks)



## SIXTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION, MARCH 2022

B.C.A.

BCA 6B 17 (E4)—SYSTEM SOFTWARE

(2017. and 2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

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

1. YACC stands for \_\_\_\_\_.
2. True or False : Macros reduce the size of source code.
3. \_\_\_\_\_ combines all object modules of a program into a single object file.
4. \_\_\_\_\_ is a translator which perform macro expansion.
5. REPEAT MACRO NOPS

REPT NOPS

NOP

ENDM

ENDM

The above is an example of :

- |                             |                        |
|-----------------------------|------------------------|
| (a) Referential macro call. | (b) Nested macro call. |
| (c) Inherited macro call.   | (d) None.              |
6. For \_\_\_\_\_ loader, relocation information is not required.
  7. Binder is related to :

(a) Linking and loading.	(b) Compilation.
(c) Macroprocessing.	(d) None.
  8. A compiler can detect :

(a) Logical errors.	(b) Syntax errors.
(c) Both logical and syntax errors.	(d) None of these.

**Turn over**

9. In a compiler ————— phase groups characters into tokens.
10. Leaf nodes in a parse tree indicates —————.

(10 × 1 = 10 marks)

### Part B

*Answer all questions.  
Each question carries 2 marks.*

11. Differentiate between static and dynamic linking.
12. Compare macro call and function call.
13. What do you mean by a relocatable program ?
14. List the phases of a compiler.
15. What do you mean by a dead code ?

(5 × 2 = 10 marks)

### Part C

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

16. Explain the functions of loaders.
17. Summarize the data structures used in a single pass assembler.
18. Differentiate between assemblers, compilers and interpreters.
19. Summarize features of macros.
20. Explain overlays.
21. Write a note on YACC.
22. Write a note on symbol table.
23. Summarize the process of code generation.

(5 × 4 = 20 marks)

### Part D

*Answer any five questions.  
Each question carries 8 marks.*

24. Give a detailed account of the design of a two pass assembler.
25. Discuss the design of a Macroprocessor.

26. Illustrate macro definition, macro call and macro expansion with suitable examples.
27. Discuss the different loader schemes.
28. Discuss the features of LEX with suitable illustrations.
29. Give a detailed account of dynamic linking and dynamic loading.
30. Discuss the different code optimization strategies.
31. Summarize the different intermediate code forms.

(5 × 8 = 40 marks)

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**SIXTH SEMESTER (CUCBCSS-UG) DEGREE EXAMINATION, MARCH 2022**

B.C.A.

BCA 6B 17 (E3)—SOFTWARE TESTING AND QUALITY ASSURANCE

(2017 and 2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

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

1. Define software quality.
2. What is static testing ?
3. List any *two* challenges in white box testing.
4. When to do black box testing ?
5. What is the need of system testing ?
6. What is non-functional testing ?
7. When to do regression testing ?
8. What is deployment ?
9. Define software process.
10. What is Progress Metrics ?

(10 × 1 = 10 marks)

**Part B***Answer all questions.**Each question carries 2 marks.*

11. Briefly explain test planning.
12. Discuss different types of regression testing.
13. Comment on structural testing.
14. What is implementation ?

**Turn over**

15. Write the advantages of incremental process model.
16. Write the challenges in black box testing.
17. What is validation ?
18. Define productivity metrics.

(8 × 2 = 16 marks)

### Part C

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

19. Write the difference between scenario testing and defect bash testing.
20. Write a note on test execution and test reporting.
21. Discuss different phases in SDLC.
22. Briefly explain about software quality assurance.
23. What is waterfall model ? Discuss different phases in detail.
24. Write a note on acceptance testing.
25. Compare and contrast static testing and dynamic testing.
26. What are test cases ? How will you define a test case?
27. How will you perform system testing ?

(6 × 4 = 24 marks)

### Part D

*Answer any three questions.  
Each question carries 10 marks.*

28. Discuss spiral model in detail.
29. What is integration testing ? Discuss the advantages of integration testing.
30. Write a note on functional testing and its types.
31. Write significance of performance testing in software engineering.
32. How will you measure quality using project metrics ? Explain in detail.

(3 × 10 = 30 marks)

**SIXTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION, MARCH 2022**

B.C.A.

BCA 6B 17 (E2)—MULTIMEDIA SYSTEMS

(2017 and 2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

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

1. The reference from one document to another document, image, sound, or file on the website is an \_\_\_\_\_ allows an end user to control what and when the elements are delivered.
2. The type of image used for photo-realistic images and for complex drawing requiring fine detail is the \_\_\_\_\_.
3. Which file format is used for Photoshop.
4. The type of image used for lines, boxes, circles, polygons, and other graphic shapes that can be mathematically expressed in angles, coordinates, and distances is the \_\_\_\_\_.
5. The software vehicle, the messages, and the content presented on a computer or television screen together make up :
6. The information that makes up a multimedia presentation is referred to as \_\_\_\_\_.
7. Write a notes on dithering.
8. A term that applies to the spacing between characters of text \_\_\_\_\_.
9. Type sizes are usually expressed in \_\_\_\_\_.
10. Each graphic scene in an animation is referred to as an \_\_\_\_\_.

(10 × 1 = 10 marks)

**Part B***Answer all questions.**Each question carries 2 marks.*

11. Mention the major uses of Multimedia ?
12. Differentiate OMR and OCR.
13. Mention different audio file format for the web.

**Turn over**

14. Explain video compression techniques.
15. Explain virtual reality concepts
16. List any three broad cast video standards.
17. Explain the different operation associated with sound editing.
18. What is AVI format ?

(8 × 2 = 16 marks)

### Part C

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

19. Write notes on alpha and beta testing.
20. Mention some of the image formats used in multimedia ?
21. Explain RFP and bid proposals.
22. Explain additive and subtractive color.
23. Differentiate MIDI and digital audio.
24. What is the difference between bitmap graphics and vector graphics ?
25. List the features of 3-D modeling tools.
26. Write the difference between critical path method and program evaluation review technique.
27. Explain the concept of setting proper sound recording levels

(6 × 4 = 24 marks)

### Part D

*Answer any three questions.  
Each question carries 10 marks.*

28. Explain in detail the various features for development of a typical multimedia project.
29. Explain the different types of multimedia authoring tools.
30. What is the various connection methodologies used in multimedia.
31. What are the concepts in using content created by others ?
32. Explain the stages in planning and costing of multimedia project.

(3 × 10 = 30 marks)

**SIXTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION, MARCH 2022**

B.C.A.

BCA 6B 17 (E1)—MICROPROCESSOR AND APPLICATIONS

(2017 and 2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

**Part A**

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

1. 8086 is a \_\_\_\_\_ bit microprocessor.
2. Which of the following register is used for register indirect addressing ?
  - a) Base pointer.
  - b) Source Index.
  - c) Destination Index.
  - d) All of these.
3. MOV AX, CX is an example of \_\_\_\_\_ addressing mode.
4. True or False : INTR is a non-maskable interrupt.
5. \_\_\_\_\_ assembler directive is used to identify the start of a procedure.
6. True or False : a macro is called using CALL instruction.
7. 8255 is \_\_\_\_\_.
8. 8253 has \_\_\_\_\_ independent counters.
9. \_\_\_\_\_ is an example of DOS interrupt.
10. BIOS stands for \_\_\_\_\_.

(10 × 1 = 10 marks)

**Part B**

*Answer all questions.  
Each question carries 2 marks.*

11. Draw the flag register of 8086.
12. Explain the following branch instructions : JC and JE.
13. Differentiate between macros and procedures.

**Turn over**



14. Explain the operating modes of 8255.
15. Identify and explain any two BIOS interrupts.

(5 × 2 = 10 marks)

### Part C

*Answer any five questions.*

*Each question carries 4 marks.*

16. Outline the pin configuration of 8086.
17. Summarize 8086 minimum and maximum configuration.
18. Identify and explain any four 8086 data transfer instructions.
19. Identify and explain any four process control instructions.
20. Compare 80186 and 80286.
21. Discuss the functions of a programmable interrupt controller.
22. Write an assembly language program to add n integers.
23. Summarize the steps in developing and executing an assembly language program.

(5 × 4 = 20 marks)

### Part D

*Answer any five questions.*

*Each question carries 8 marks.*

24. Discuss 8086 architecture.
25. Give a detailed account of 8086 interrupts.
26. Discuss 8086 addressing modes.
27. Discuss the architecture of 80386.
28. Explain the advanced features of 486 and Pentium processors.
29. With the help of a block diagram explain the working of programmable DMA controller.
30. With the help of a block diagram explain the working of Programmable Communication Interface.
31. Explain procedure definition and procedure call with suitable examples.

(5 × 8 = 40 marks)

**SIXTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION, MARCH 2022**

B.C.A.

BCA 6B 13—COMPUTER NETWORKS

(2017 and 2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

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

1. Give any three advantages of network.
2. What do you mean by switching ?
3. What is single bit error ?
4. What are parity bits and even parity ?
5. Write short note on multiple access control protocol.
6. What is multicast address.
7. Expand UDP.
8. Write the use of digital signature.
9. What is steganography ?
10. What is polling ?

(10 × 1 = 10 marks)

**Part B***Answer all questions.**Each question carries 2 marks.*

11. Explain TCP/IP.
12. What is passive attack ?
13. Explain single parity check.
14. Write any two application protocols.
15. Explain random access protocol.
16. What is the difference between Ethernet and Wi-Fi ?
17. Explain DES structure.
18. Explain the various types of attacks.

(8 × 2 = 16 marks)

**Turn over**

**Part C**

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

19. Explain transposition ciphers in details.
20. Explain network address translation.
21. What are the functions of transport layer ?
22. What is the difference between distance vector routing and link state routing ?
23. Explain the term ALOHA and CSMA/CD.
24. What is the difference between DTE and DCE ?
25. Explain the functions of TCP/IP layers with diagram.
26. Explain the applications of key crypto systems.
27. Differentiate electronic signature and digital signature.

(6 × 4 = 24 marks)

**Part D**

*Answer any three questions.  
Each question carries 10 marks.*

28. Briefly explain digital signature services and attack on digital signature.
29. What are the functions of network layer in OSI model ? Explain.
30. Explain in details :
  - a) Computer network types.
  - b) Types of topologies.
31. What is subnet mask ? How it is represented ?
32. Explain various topologies used in computer networks in details.

(3 × 10 = 30 marks)

**SIXTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION  
MARCH 2022**

B.C.A.

BCA 6B 12—OPERATING SYSTEMS

(2017 and 2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

**Part A**

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

1. Define Operating System.
2. Which scheduler is also called a job scheduler ?
3. Which command is used to create Linux file system ?
4. What is function of 'cat' command in Linux ?
5. List the classic synchronization problems ?
6. Name any *four* file attributes.
7. When does page fault occur ?
8. What is the use of TLB ?
9. What is bit vector ?
10. Write any *one* feature of Windows NT.

(10 × 1 = 10 marks)

**Part B**

*Answer all questions.  
Each question carries 2 marks.*

11. What are the file accessing methods ?
12. What are wait and signal operations in semaphore?
13. Write any *two* advantages of Linux OS ?
14. Write the importance of grep command in Linux.
15. Differentiate file and database systems.
16. How page is different from segment ?

**Turn over**

17. What are the contents of PCB ?
18. What is meant by page fragmentation ?

(8 × 2 = 16 marks)

### Part C

*Answer any six questions.*

*Each question carries 4 marks.*

19. Write about distributed operating system.
20. Explain critical section problem.
21. What is safe and unsafe state ? Discuss about it.
22. What is Linux shell ? What types of shells are there in Linux ?
23. What is meant by virtual memory ? Write the advantages of using virtual memory.
24. Describe various file attributes.
25. Explain Reader - Writer problem.
26. Differentiate between logical and physical addressing with examples.
27. Explain about the hardware support in paging memory management method.

(6 × 4 = 24 marks)

### Part D

*Answer any three questions.*

*Each question carries 10 marks.*

28. What are the four necessary conditions for deadlock? Explain Banker's deadlock avoidance algorithm.
29. Compare the different types of operating systems.
30. Explain the commands for navigating the Linux file system with example.
31. Explain multilevel queue scheduling and multilevel feedback queue scheduling.
32. Explain the various page replacement algorithms.

(3 × 10 = 30 marks)

**SIXTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION  
MARCH 2022**

B.C.A.

BCA 6B 11—ANDROID PROGRAMMING

(2017 to 2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

**Part A (Short Questions)**

*Answer all questions.*

*Each question carries 1 mark.*

1. What is Android Cursor ?
2. Define the purpose of Android Manifest .Xml ?
3. Name the four states in the Android Life Cycle ?
4. What are Layout Resources ?
5. What is Pending Intent ?
6. What is SQLite ?
7. Name the two Important Parts of Android SDK ?
8. What is a view in Android ?
9. The first Android Version was released in the year \_\_\_\_\_.
10. What are containers ?

(10 × 1 = 10 marks)

**Part B (Paragraph)**

*Answer all questions.*

*Each question carries 2 marks.*

11. What are styles and themes in Android ?
12. Write about popup menu in Android with Example ?
13. What is the function of the action bar ?
14. What is the use of Content provider ?
15. What are the four key components of Android architecture ?

**Turn over**

16. What is the purpose of WHERE clause ?
17. How to implement MapView in Android ?
18. List features of Android Operating System.

(8 × 2 = 16 marks)

### Part C ( Short Essays)

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

19. Explain Check Box in detail with Example.
20. Explain Architecture of content providers.
21. What is an AVD ? Explain the uses.
22. Explain Android software Stack ?
23. What are the attributes of Radio Button control ? Explain.
24. Write note on Android Manifest ?
25. What is the use of Fragments in Android ?
26. Differentiate String Resources and Layout Resources ?
27. Write short note on Adapters and Adapter views ?

(6 × 4 = 24 marks)

### Part D (Essays)

*Answer any three questions.  
Each question carries 10 marks.*

28. Describe the significance of SQLite database in Android.
29. Develop a simple calculator using table layout.
30. Briefly explain the following Android menus
  - Icon menu.
  - Sub menu.
  - Context menu.
  - Dynamic menus.
31. How to create a dynamic RadioButton in Android ?
32. What are content providers? Explain how to query, read, update and delete data in content providers ?

(3 × 10 = 30 marks)

**SIXTH SEMESTER (CUCBCSS-UG) DEGREE EXAMINATION, MARCH 2022**

B.C.A.

BCA 6B 18 (E3)—SOFTWARE TESTING AND QUALITY ASSURANCE

(2014 to 2016 Admissions)

Time : Three Hours

Maximum : 80 Marks

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

1. Name any tools for performance testing.
2. SDLC stands for \_\_\_\_\_.
3. What is defect bash ?
4. Structural testing is also known as \_\_\_\_\_.
5. Name any *two* phases of software project development.
6. What is software metrics ?
7. Differentiate expected output and actual output.
8. \_\_\_\_\_ metrics can be used to improve software development and maintenance.
9. \_\_\_\_\_ is the process of evaluating software at the end of the software development process to determine whether software meets the customer expectations and requirements.
10. White box testing is classified into \_\_\_\_\_ and \_\_\_\_\_ Testing.

(10 × 1 = 10 marks)

**Turn over**



**Part B**

*Answer all questions.*

*Each question carries 2 marks.*

11. Explain about software testing team.
12. What are all the challenges in white box testing ?
13. What is scenario testing ?
14. What is domain testing ?
15. Explain the factors governing the performance testing.

(5 × 2 = 10 marks)

**Part C**

*Answer any five questions.*

*Each question carries 4 marks.*

16. Explain SQA.
17. What is dataflow testing ?
18. Explain project and progress metrics.
19. What is boundary value analysis ?
20. Explain the different types of regression testing.
21. What is acceptance testing ?
22. Differentiate white box and black box testing.
23. Explain any *two* testing methods.

(5 × 4 = 20 marks)

**Part D**

*Answer any five questions.*

*Each question carries 8 marks.*

24. Explain waterfall model in software development.
25. Compare and contrast alpha and beta testing.
26. What is static testing ? Explain the different methods to achieve static testing by humans.
27. Explain the methodology and process for performance testing.
28. Explain Test Planning, Test Management, Test Process, Test Reporting,
29. What is black box testing ? Explain in detail why black box testing needed.
30. What is functional testing ? Differentiate functional and non-functional testing.
31. Explain the different metrics used in software testing.

(5 × 8 = 40 marks)

**SIXTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION, MARCH 2022**

B.C.A.

BCA 6B 18 (E1)—COMPUTER GRAPHICS

(2014 to 2016 Admissions)

Time : Three Hours

Maximum : 80 Marks

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

1. A transformation that slants the shape of an object is called \_\_\_\_\_.
2. \_\_\_\_\_ is a method where the horizontal lines of a video display are updated on odd and even lines alternately .
3. The \_\_\_\_\_ is the number of times a display's image is repainted or refreshed per second.
4. \_\_\_\_\_ is the sequence of bits for each pixel in a bitmap.
5. A matrix of color data that is searched in order to change a source set of colors to a destination set is called \_\_\_\_\_.
6. A \_\_\_\_\_ is a special computer designed for graphics or scientific applications having a powerful CPU and high resolution display.
7. \_\_\_\_\_ are a set of values that quantify the location of a point based on the distance between the point and a fixed origin and the angle between the point and a fixed direction.
8. Name two pointing devices.
9. In 3D modelling, \_\_\_\_\_ means moving parallel to the current view plane.
10. In Cohen Sutherland line clipping, the two dimensional space is divided into \_\_\_\_\_ regions.

(10 × 1 = 10 marks)

**Part B***Answer all questions.**Each question carries 2 marks.*

11. What is a frame buffer ?
12. What do you mean by horizontal retrace ?

**Turn over**

13. What is rubber band technique ?
14. What is text clipping ?
15. What is the purpose of painter's algorithm ?

(5 × 2 = 10 marks)

### Part C

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

16. Explain the concept of 3D modelling in computer graphics.
17. Explain point clipping.
18. Explain the role of deflecting plates in a CRT.
19. What do you mean by attributes of output primitives ?
20. Explain modelling co-ordinates, world co-ordinates and device co-ordinates.
21. Explain the concept of reflection with diagrams.
22. Distinguish between uniform scaling and differential scaling.
23. What are inverse geometric transformations ?

(5 × 4 = 20 marks)

### Part D

*Answer any five questions.  
Each question carries 8 marks.*

24. Explain DDA line drawing algorithm.
25. Write short notes on keyboard and mouse.
26. Explain Bresenham's circle drawing algorithm.
27. Explain translation, rotation and scaling in 2D.
28. Explain different types of projection.
29. Explain hard copy devices.
30. Explain the working of raster scan and random scan display devices.
31. Write short notes on digitizing tablet.

(5 × 8 = 40 marks)

**SIXTH SEMESTER (CUCBCSS-UG) DEGREE EXAMINATION, MARCH 2022**

B.C.A.

BCA 6B 15—OPERATING SYSTEMS

(2014 to 2016 Admissions)

Time : Three Hours

Maximum : 80 Marks

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

1. \_\_\_\_\_ refers to a set of policies and mechanisms built into the operating system that govern the order in which the work to be done by a computer system is completed.
2. \_\_\_\_\_ time is the sum of execution and waiting times.
3. The deadlock conditions can be modelled using a directed graph called \_\_\_\_\_.
4. The process of associating program instructions and data to physical memory addresses is called \_\_\_\_\_.
5. Each partition in memory management is described by its \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.
6. \_\_\_\_\_ is wastage of memory within a partition caused by difference between size of partition and the process allocated.
7. In paging, PMTBR stands for \_\_\_\_\_.
8. \_\_\_\_\_ is designed to solve the problem of running a program that needs more memory than the hardware has.
9. \_\_\_\_\_ happens when a process is busy swapping pages in and out or page-fault rate is very high.
10. Name *two* categories of devices in device management.

(10 × 1 = 10 marks)

**Turn over**

**Part B**

*Answer all questions.*

*Each question carries 2 marks.*

11. How is the memory management in batch operating system ?
12. What do you mean by multi-threading ?
13. What is blocked state of a process ?
14. What is pre-emptive scheduling ?
15. What is segmentation ?

(5 × 2 = 10 marks)

**Part C**

*Answer any five questions.*

*Each question carries 4 marks.*

16. Explain the concept of time sharing operating system.
17. What do you mean by mutual-exclusion condition for a dead lock ?
18. What are the advantages and disadvantages of Banker's algorithm ?
19. Explain the concept of fixed partitioning in memory management.
20. What is external fragmentation ?
21. Explain the concept of LRU in page replacement.
22. What do you mean by sequential access in file organization ?
23. What is spooling in device management ?

(5 × 4 = 20 marks)

**Part D**

*Answer any five questions.*

*Each question carries 8 marks.*

24. Explain multi-tasking operating system.
25. Explain the hierarchical structure of an operating system.
26. Explain the concept of medium-term scheduler.
27. Explain Shortest Remaining Time Next (SRTN) scheduling.

28. Explain the concept of deadlock prevention.
29. Explain the single contiguous memory management.
30. Explain the concept of paging.
31. Explain boot blocks and bad blocks in disk space management.

(5 × 8 = 40 marks)

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**SIXTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION  
MARCH 2022**

B.C.A.

BCA 6B 14—SOFTWARE ENGINEERING

(2014 to 2016 Admissions)

Time : Three Hours

Maximum : 80 Marks

**Part A**

*Answer all questions.*

*Each question carries 1 mark.*

1. ERD stands for \_\_\_\_\_.
2. \_\_\_\_\_ is one of the Quality attribute.
3. Spiral model was developed by \_\_\_\_\_.
4. \_\_\_\_\_ is the process of ensuring the specified requirements meet the customer needs.
5. \_\_\_\_\_ test is conducted at customer's site.
6. UML \_\_\_\_\_ displays the structural relationship of components of a software system.
  - (a) Package Diagram.
  - (b) Activity Diagram.
  - (c) Component Diagram.
  - (d) Use case Diagram.
7. What is SCM ?
8. Software \_\_\_\_\_ is the activity for ensuring quality in software engineering process.
  - (a) Engineering.
  - (b) BPR Model.
  - (c) Testing.
  - (d) Quality Assurance.
9. What is verification and validation ?
10. What is software maintenance ?

(10 × 1 = 10 marks)

**Part B**

*Answer all questions.*

*Each question carries 2 marks.*

11. Explain any four object oriented concepts.
12. Explain unit testing.

**Turn over**



13. What is COCOMO ?
14. Explain about ISO 9000 quality standards.
15. Explain the characteristics of a user interface.

(5 × 2 = 10 marks)

### Part C

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

16. Explain Object Oriented Software design.
17. Explain characteristics and structure of SRS.
18. What is risk management ? Explain.
19. What is UML ? Explain its importance case model.
20. Explain Computer Aided Software Engineering (CASE).
21. Explain different coding methods and techniques.
22. What is testing ? Explain white box testing.
23. Explain software quality and software quality management system.

(5 × 4 = 20 marks)

### Part D

*Answer any five questions.  
Each question carries 8 marks.*

24. What is a prototype ? Explain prototyping model of software development.
25. Explain Software Requirement Specification (SRS) in detail.
26. Explain UML Diagrams, Class Diagrams, Interaction Diagrams, Activity Diagrams and State Chart Diagram.
27. What is testing ? Differentiate white box and black box testing.
28. What is re-engineering ? Explain the Business Process Re-engineering (BPR).
29. Describe various software maintenance methods.
30. Explain the two qualitative criteria for measuring functional independence.
31. Explain CASE Tool and architecture of a CASE Environment.

(5 × 8 = 40 marks)

**SIXTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION  
MARCH 2022**

B.C.A.

BCA 6B 13—WEB PROGRAMMING

(2014 to 2016 Admissions)

Time : Three Hours

Maximum : 80 Marks

**Part A**

*Answer all questions.*

*Each question carries 1 mark.*

1. Name the border style properties of CSS.
2. \_\_\_\_\_ helps to resolve the host name to an address.
3. PHP stands for \_\_\_\_\_.
4. \_\_\_\_\_ tag is used to put any content in the center of the page or any table cell.
5. Name the different types of lists available in HTML.
6. \_\_\_\_\_ is the attribute for setting background color.
7. 1 em = \_\_\_\_\_ px.
8. \_\_\_\_\_ property specifies an image for the marker rather than a bullet point or number in a list in CSS.
9. \_\_\_\_\_ function in PHP returns the current row of a result-set, as an object.
10. With \_\_\_\_\_ it is possible to update parts of a web page, without reloading the whole page.

(10 × 1 = 10 marks)

**Part B**

*Answer all questions.*

*Each question carries 2 marks.*

11. How will you create a textbox in HTML ?
12. What is the purpose of GET method ?
13. Explain paragraph tags with its attributes in HTML.

**Turn over**

14. What is the use of <IMG> tag in HTML ?
15. What are cookies ?

(5 × 2 = 10 marks)

### Part C

*Answer any five questions.*

*Each question carries 4 marks.*

16. Explain HTML document structure with an example.
17. Explain the formatting tags used for bold, italics and underlined text.
18. Explain destructors in PHP with an example program.
19. Explain text alignment in text formatting of CSS.
20. Explain absolute positioning in CSS.
21. Explain the concept of Image sprites with example program.
22. Explain onBlur event in JavaScript with an example.
23. Explain the functions strpos( ) and strstr( ) in PHP.

(5 × 4 = 20 marks)

### Part D

*Answer any five questions.*

*Each question carries 8 marks.*

24. How will you define functions in JavaScript ? Illustrate with an example.
25. Explain the decision making statements in JavaScript.
26. Explain the concept of frames in HTML with example program.
27. Explain single inheritance in PHP with example program.
28. What are the advantages of using CSS while designing a Web page ?
29. Explain with a program how will you connect PHP to MySQL and delete records from a table.
30. Explain with an example how to create functions in PHP.
31. Explain how to display records from MySQL in a Web page.

(5 × 8 = 40 marks)

**SIXTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION, MARCH 2021**

B.C.A.

BCA 6B 18 (E2)—MULTIMEDIA SYSTEMS

(2014 Admissions)

Time : Three Hours

Maximum : 80 Marks

**Part A**

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

1. In \_\_\_\_\_ animations, several objects are allowed to move simultaneously and the objects or the background can also change.
2. MIDI stands for \_\_\_\_\_.
3. Name any two analog video broadcast standards.
4. JPEG stands for \_\_\_\_\_.
5. The digital display video standard ISBD stands for \_\_\_\_\_.
6. AIFF stands for \_\_\_\_\_.
7. Name any two video formats used in multimedia.
8. PERT stands for \_\_\_\_\_.
9. A \_\_\_\_\_ is a data matrix describing the individual dots of an image.
10. Converting bitmaps to drawn object is more difficult and is called \_\_\_\_\_.

(10 × 1 = 10 marks)

**Part B**

*Answer all questions.  
Each question carries 2 marks.*

11. What do you mean by hypermedia ?
12. What is TIFF ?
13. Mention the steps in the process of making multimedia.
14. What do you mean by color palettes ?
15. What is a clip art gallery ?

(5 × 2 = 10 marks)

**Turn over**

**Part C**

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

16. What are the requirements for producing and delivering multimedia ?
17. Explain the role of production manager in multimedia production team.
18. Mention the steps involved in task planning.
19. Explain prototype development.
20. Explain Gantt charts.
21. Differentiate MIDI and digital audio.
22. Explain the concept of morphing.
23. Write notes on vector images.

(5 × 4 = 20 marks)

**Part D**

*Answer any five questions.  
Each question carries 8 marks.*

24. Briefly explain the application on multimedia in entertainment.
25. Explain the concept of animation.
26. Write short notes on digital audio.
27. Explain the input devices used for the production of multimedia.
28. Explain various audio file formats.
29. Explain the different steps in multimedia production.
30. Write notes on bid proposals.
31. Explain in detail how video works.

(5 × 8 = 40 marks)