(6 pages) **Reg. No. :** .....

Code No. : 20231 E **Sub. Code : SMCA 11/ AMCA 11**

B.C.A (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

First Semester

Computer Application — Core

PROGRAMMING IN C

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. In C language all keyword must be in
   (a) Upper case
   (b) Lower case
   (c) Both upper and lower
   (d) Special characters

2. The quantities represented by fraction are called

(a) Integer

(b) Floating point

(c) String

(d) All of the above

3. Types of storage class in C

(a) 2 (b) 5

(c) 4 (d) 7

4. _____ function call is used to carry out output operation

(a) Scanf (b) Printf

(c) Getchar (d) Main

5. The %d scanf format is used to read

(a) Floating point (b) String

(c) Char (d) Integer

6. Array can be initialized during _____.

(a) Run time

(b) Complete time

(c) Both (a) and (b)

(d) None

7. The function in C are classified into category as

(a) Library functions

(b) User-defined functions

(c) Both (a) and (b)

(d) All the above

8. Dynamic arrays are created using

(a) Pointer variables

(b) Management functions

(c) Only (a)

(d) Both (a) and (b)

9. Variable that are active throughout the program are called _____ variable

(a) External

(b) Internal

(c) String

(d) Constant

10. _____ operator indicates the address of a variable

(a) &

(b) %

(c) *

(d) +

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Discuss the structure of C program.

Or

(b) Write a C program to find simple and compound interest.

12. (a) Discuss the library functions in C.

Or

(b) Write a program to find the biggest among three numbers.

13. (a) What is an array? Explain.

Or

(b) Write a C program to find smallest among N numbers.

14. (a) Discuss about any five string functions.

Or

(b) Write a program to find the comparison of two strings.

15. (a) What is the purpose of feof() and ferror() functions?

Or

(b) Explain array pointer with example.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Write a C program to find a number is Armstrong or not.

Or

(b) Discuss about printf and scanf functions.

17. (a) Write a program to compute the sum of digits of an integer number.

Or

(b) Differentiate between wile and do while statement.

18. (a) What is multi-dimensional array? Explain.

Or

(b) What is an array? Explain with its types and examples.

19. (a) Define function. Explain the types of user defined function.

Or

(b) Write C program to sort names in descending order.

20. (a) Write a C program pointers and arrays.

Or

(b) Describe pointer arithmetic and pointer expression.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20232 E **Sub. Code : SMCA 21/ AMCA 21**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Second Semester

Computer Application — Core

OBJECT ORIENTED PROGRAMMING WITH C++

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which of the following in the correct syntax to print the message in C++ language?

   (a) cout << "Hello world">>;

   (b) cout << Hello world!";

   (c) cout<<“Hellow world!”;

   (d) none of the above

2. In C++ language, a token may be

(a) An operator (b) a string

(c) a constant (d) All the above

3. Which of the following in the correct system to read the single character to console in the C++ language?

(a) Read ch( )

(b) Getline vh ( )

(c) get (ch)

(d) Scanf (ch)

4. The key words private and public are known as _____ labels.

(a) Go to

(b) Lables

(c) Visibility

(d) Reference

5. A member declared as protected is accessible by the member function of ————————.

(a) Within a class

(b) Within friend class

(c) Another class

(d) Any class derived from it

6. Which of the process by which objects of one class acquire properties of objects of another class.

(a) Polymorphism

(b) Inheritance

(c) Scheduling

(d) Encapsulatin

7. A constructor that accepts no parameter is called - _____ constructor.

(a) Default (b) Dynamic

(c) Copy (d) Static

8. How to access and edit data in data file handling using

(a) Read ( ) (b) Write ( )

(c) Both (a) and (b) (d) execute ( )

9. To perform file input/output operation in C++ we must include which header file?

(a) <fiostream> (b) <ifstream>

(c) <fstream> (d) <ofstream>

10. In C++ program inline functions are expanded during

(a) Run time (b) Compile time

(c) Debug time (d) Coding time

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Discuss basic concept of oops?

Or

(b) Write down the benefits of oops?

12. (a) Discuss the concept of call by reference parameter in detail.

Or

(b) Write a C++ program to find the largest of three numbers.

13. (a) Write about the member function of istream class and manipulators.

Or

(b) List out the rules for overloading operators.

14. (a) Write about single inheritance with example.

Or

(b) Describe hybrid inheritance with example.

15. (a) Explain data file operations in C++

Or

(b) Discuss about this pointer with example.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Explain different kinds of operators in C++

Or

(b) Explain the control structures in C++

17. (a) Explain the accessing private members with functions in detail.

Or

(b) Write in detail about over loading.

18. (a) How do you specify a class - Explain.

Or

(b) Explain the constructors and destructors in detail.

19. (a) Write a C++ program for preparing student mark list using multiple inheritance.

Or

(b) Discuss hierarchical inheritance with example.

20. (a) Explain formatted console I/o operations.

Or

(b) How do you open and close a file in C++

———————

(8 pages) **Reg. No. :** .....

Code No. : 20234 E **Sub. Code : SMCA 32/ AMCA 32**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Third Semester

Computer Application — Core

FINANCIAL ACCOUNTING

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Accounting equation is

   (a) Capital = Assets + liabilities

   (b) Profit = Assets – liabilities

   (c) Assets = Liabilities + capital

   (d) Assets – liabilities

2. commission received is an example for

(a) real account (b) personal account

(c) nominal account (d) none

3. The process of transferring entries from books of original entry to the ledger is called

(a) Journalizing (b) Posting

(c) Balancing (d) Analyzing

4. Withdrawals of cash from bank by proprietor for office use should be credited to

(a) Drawing's a/c (b) Bank a/c

(c) Cash a/c (d) Withdrawal a/c

5. Prepaid rent given in trial balance is treated as

(a) an asset (b) an expense

(c) a revenue (d) an income

6. Loan borrowed will be shown on the ———— of the trial balance.

(a) credit side

(b) credit side or debit side

(c) credit side and debit side

(d) debit side

7. Outstanding wages is

(a) an asset (b) an income

(c) an expenditure (d) a liability

8. Excess of sales over cost of goods sold

(a) net profit (b) net loss

(c) gross profit (d) gross loss

9. Receipts and payment account is

(a) real account (b) nominal account

(c) personal account (d) none

10. Balance sheet reveals

(a) closing balance of assets and liabilities

(b) expenses alone

(c) income alone

(d) profit and loss

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Define accounting. Mention the objectives of accounting.

Or

(b) What are the various accounting conventions? Explain them.

12. (a) Write any five difference between journal and ledger.

Or

(b) Journalize the following in the book of Mr. Kannan.

2003	Particulars	Rs.
Jan 3	Paid salaries	3,000
5	Sold goods for cash	10,000
10	Sold machinery	20,000
15	Bought goods for cash	6,000
18	Commission received	3,000

13. (a) From the following information, prepare a trial balance.

Particulars	Rs.	Particulars	Rs.
Cash	28,650	Sales	7,000
Capital	50,000	Purchase	10,100
Bank	13,500	Wages	200
Furniture	3,000	Drawings	1,250
Sundry creditors	2,800	Stationery	100
Sundry debtors	2,000	Salary	1,000

Or

(b) Explain the different types of errors which are disclosed by trial balance.

14. (a) From the following information, prepare trading account for the year ended with 31.12.2000.

Particulates	Rs.
Stock as on 1.1.2000	30,000
Purchases during 2000	1,50,000
Sales during 2000	2,00,000
Closing stock	40,000

Or

(b) What are stages in preparation of final accounts? Explain.

15. (a) Distinguish between Capital Expenditure and Revenue Expenditure.

Or

(b) From the following particulars, prepare receipts and payments account of Mumbai sports club for the year ending 31.12.2008.

Particulars	Rs.
Cash in hand (opening)	100
Cash at bank (opening)	500
Subscription received	3,300
Donation received	260
Rent paid	400
General expenses	210
Postal	70
Miscellaneous expenses	30
Cash (closing balance)	20

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Explain the various accounting concepts.

Or

(b) What are the various steps in the process of accounting? Explain.

17. (a) Define ledger. Explain its characteristics.

Or

(b) Journalized the following transactions in the book of Mr. Mahadevan.

1995 Feb	Particulars	Rs.
3	Bought goods for cash	14,500
7	Sold goods to Lakshmi on credit	5,000
9	Received commission	300
10	Cash sales	29,000
12	Bought goods from Meenakshi	6,000
15	Received furniture from Saravana	1,500
28	Paid salaries	1,000

18. (a) From the following ledger balances, prepare a trial balance of Anandhan traders as on Dec 31, 2003.

Particulars	Rs.
Capital	1,00,000
Sales	1,66,000
Purchases	1,50,000

Sales return	1,000
Discount allowed	2,000
Salaries	10,000
Debtors	75,000
Creditors	25,000
Investments	15,000
Cash @ bank	37,000
Interest received	1,500
Insurance paid	2,500

Or

(b) Rectify the following errors

(i) Purchase book is overcast by Rs. 300

(ii) Sales book is under cast by Rs. 200

(iii) Purchases returns book has been overcast by Rs. 75

(iv) Sales returns book has been under cast by Rs. 30

(v) The total of sales book Rs. 734 has been carried forward as Rs. 743

(vi) Purchases from Murugan for Rs. 200 has been omitted to be posted to his account.

19. (a) Write the format of balance sheet.

Or

(b) From the following particulars, prepare trading account.

Particulars	Rs.
Opening stock	1,87,500
Purchases	2,71,875
Sales return	15,000
Wages	37,500
Sales	6,90,000
Purchases returns	9,375
Carriage inward	7,500
Closing stock	3,75,000

20. (a) Difference between receipt and payments account and income and expenditure account.

Or

(b) Write the format of receipts and payments account.

———————

(6 pages)

Reg. No. : .....

Code No. : 20236 E **Sub. Code : SMCA 41/ AMCA 41**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Fourth Semester

Computer Applications — Core

VISUAL BASIC

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A complete repaint of a form or control can be enforced by ———— method.

   (a) upload (b) refresh

   (c) set focus (d) mouse move

2. In visual basic, a variable name cannot be more than ———— characters.

(a) 255 (b) 256

(c) 300 (d) 350

3. MDI stands for ————

(a) Multiple Design Interface

(b) Manipulated Document Interface

(c) Menu Design Interface

(d) Multiple Document Interface

4. ———— dialog box allows the user to continue with the other applications.

(a) Modal (b) Modeless

(c) Both (a) and (b) (d) Common

5. ———— event occurs when the user presses any mouse button.

(a) MouseMove (b) MouseUp

(c) MouseDown (d) All the above

6. The ———— method creates a connection between the application and the ODBC database and assigns it to a database type object.

(a) Remote data objects

(b) Open database

(c) Open result set

(d) None of the above

7. A ———— object represents a connection to a remote database used as a data source for the associated commands.

(a) Remote (b) Data

(c) Connection (d) RecordSet

8. ———— event is fired when the mouse is moved over an OLE container during an OLE drag operation.

(a) OLECompleteDrag( )

(b) OLEStarDrag( )

(c) OLEDragOver( )

(d) OLEsetData( )

9. The ———— control is used to create a hierarchy that displays at least two or more levels of a database.

(a) TreeView (b) ListView

(c) ImageList (d) StatusBar

10. ———— access files are accessed line by line.

(a) Static (b) Dynamic

(c) Sequential (d) Random

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain toolbox with diagram.

Or

(b) Elucidate various procedures in detail.

12. (a) Describe about menu editor with suitable example.

Or

(b) Compare InputBox( ) and MsgBox( ) with example.

13. (a) Define recordset and explain any four types of recordset.

Or

(b) Explain the hierarchical structure of remote data object.

14. (a) Write short note on SQL query designer.

Or

(b) Illustrate the OLEDragMode property and OLEDropMode property.

15. (a) Write about file system controls.

Or

(b) Explain ADO object model in detail.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Discuss about form properties and methods.

Or

(b) Describe the text box and command button controls with example.

17. (a) Describe about dialog box with suitable example.

Or

(b) Explain FlexGrid control with example.

18. (a) Discuss about evolution of computing architectures.

Or

(b) Explain about Remote Data Objects

19. (a) Describe data environment designer in detail.

Or

(b) Explain OLE Drag and Drop with example.

20. (a) Discuss the following Activex control :

(i) Sysinfo control

(ii) Slider control

(iii) Progress bar control

(iv) MSChart control.

Or

(b) Describe the following :

(i) Random access files

(ii) Binary access files.

———————

(6 pages)

Reg. No. : .....

Code No. : 20237 E **Sub. Code : SMCA 42/ AMCA 42**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Fourth Semester

Computer Application — Core

E-COMMERCE

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which one is the newest and best business communication channel?

   (a) LAN (b) www

   (c) Internet (d) VPN

2. Electronic commerce systems require significant investments in

   (a) Hardware

   (b) Software

   (c) Staffing and training

   (d) All the above

3. The security threat that intercepts the private content of a transaction en routed over the internet is

   (a) Spoofing (b) Eavesdropping

   (c) Data alteration (d) Phishing

4. OLAP is

   (a) Online Analytical Processing

   (b) Online Analytics and Processes

   (c) Online Loading and Analytical Processing

   (d) None of the above

5. Security of credit card information over the internet is implemented using ————————

   (a) Encryption (b) ASP files

   (c) Firewall (d) Secure socket layer

6. The ———— stage involves building a basic layout of the site so as t see what the final site will look like.

(a) Design (b) Prototype

(c) Implementation (d) Planning

7. Expand CORBA

(a) Common Object Request Broker Architecture

(b) Common Object Request Based Architecture

(c) Consumer Oriented Request Broker Architecture

(d) Component Oriented Request Broker Architecture

8. The primary function of a web-server is to send appropriate HTML code to the ————

(a) Client (b) Web application

(c) Web browser (d) Website

9. Which one is not database software?

(a) HTML (b) SQL server

(c) Oracle (d) IBM DB2

10. IDS is

(a) Internet Denial System

(b) Intrusion Detection System

(c) Internet Detection System

(d) Intrusion Defend System

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Mention the issues faced by companies while implementing E-commerce.

Or

(b) Write short note on intellectual property protection.

12. (a) Write about the business process domains on e-business model.

Or

(b) Write down the elements of e-commerce to be considered in building web business.

13. (a) Write short note on configuring the network against external intrusions.

Or

(b) Explain briefly about on-demand mode and infrastructure mode of wireless communication.

14. (a) Write down the three main stakeholders of enterprise development needs.

Or

(b) Mention the problem-solving techniques of flexible merchandising.

15. (a) What are the requirements of an e-BI application development solution?

Or

(b) Write short note on cybercrime.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Explain the benefits of E-commerce market.

Or

(b) Explain in detail the punchout flow in B2B connectively.

17. (a) Explain in detail about E-commerce internet service provider (ECISP).

Or

(b) What are the security threats of e-Commerce? How will you secure the websites from them?

18. (a) Explain in detail about the design stage in building the e-commerce site.

Or

(b) Explain the facilitators of a wireless environment.

19. (a) Explain the online merchandising strategies in detail.

Or

(b) How will you implement the E-commerce database?

20. (a) Explain the e-Business requirements for rapid application development.

Or

(b) What are the three lists of mistakes people make that enable attackers?

———————

Reg. No. : .....

Code No. : 20238 E **Sub. Code : SMCA 43/ AMCA 43**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Fourth Semester

Computer Application – Core

RESOURCE MANAGEMENT TECHNIQUES

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. Which statement characterizes standard form of a linear programming problem?
   (a) Constraints are given by inequalities of any type
   (b) Constraints are given by a set of linear equations
   (c) Constraints are given only by inequalities of >= type
   (d) Constraints are given only by inequalities of <= type

2. In the feasible region of a LPP is empty , then the solution is _____.

(a) Infeasible (b) Unbounded

(c) Alternative (d) None of these

3. The main objective of an assignment problem is to

(a) Minimize the total cost

(b) Maximize the sales and returns

(c) Both (a) and (b)

(d) Normal

4. When the number of rows is equal to the number of columns then the problem is said to be _____ assignment problem.

(a) Balanced (b) Unbalanced

(c) Both (a) and (b) (d) Feasible

5. In sequencing problem, the order of completion of jobs is called

(a) Completion sequence

(b) Job sequence

(c) Processing order

(d) Job order

6. A _____ is a connected network that may involved only one subset of all nodes of the network.

(a) Branches (b) Tree

(c) Loop (d) All of these

7. CPM stands for

(a) Critical Path Method

(b) Critical Programme Module

(c) Critical Perform Method

(d) Cost Path Method

8. An _____ is a task, or item of work to be done, that consume time, effort, money or other resources.

(a) Event (b) Activity

(c) Evaluation (d) Condition

9. The participants in a game are called

(a) Clients (b) Members

(c) Customers (d) Players

10. Inventory models with all the known parameters with certainty are known as _____ model

(a) Unknown cost structure

(b) Deterministic inventory

(c) Known cost structure

(d) Dynamic Demand

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) A ship has three cargo holds, forward, aft and center. The capacity limits are:

Forward 2000 tons, 100,000 cubic meters

Center 3000 tons, 135,000 cubic meters

After 1500 tons, 30,000 cubic meters.

The following cargoes are offered, the ship owners may accept all or any part of each commodity:

Commodity	*Amount in tons.*	*Volume/ton* in *cubic meters*	*Profit per ton in Rs.*
A	6000	60	60
B	4000	50	80
C	2000	25	50

In order to preserve the trim of the ship the weight in each hold must be proportional to

the capacity in tons. How should the cargo be distributed so as to maximize profit? Formulate this as linear programming problem.

Or

(b) Describe about the steps for Simplex method of linear programming

12. (a) Clarify about the procedures of Hungarian method.

Or

(b) The owner of a small machine shop has four mechanics available to assign jobs for the day. Five jobs are offered with expected profit for each mechanic on each job which are as follows:

		Job				
		A	B	C	D	E
Mechanic	1	62	78	50	111	82
	2	71	84	61	73	59
	3	87	92	111	71	81
	4	48	64	87	77	80

Find by using the assignment method, the assignment of mechanics to the job that will result in a maximum profit. Which job should be declined?

13. (a) Explain the minimum spanning tree algorithm.

Or

(b) Clarify about the various types of Job Sequencing problem.

14. (a) Explain the terms: critical path, critical activities.

Or

(b) A small project is composed of 7 activities whose time estimates are listed below. Activities are being identified by their beginning (i) and ending (j) node numbers.

Activities		Time in weeks		
i	j	t_o	t_i	t_p
1	2	1	1	7
1	3	1	4	7
1	4	2	2	8
2	5	1	1	1
3	5	2	5	14
4	6	2	5	8
5	6	3	6	15

(i) Draw the network

(ii) Calculate the expected variances for each

(iii) Find the expected project completed time

(iv) Calculate the probability that the project will be completed at least 3 weeks than expected

(v) If the project due date is 18 weeks, what is the probability of not meeting the due date?

15. (a) Solve the game with the following pay-off matrix.

Player B strategies

Palyer A strategies		I	II	III	IV	V
	1	7	5	2	3	9
	2	10	8	7	4	5
	3	9	12	0	2	1
	4	11	–2	–1	3	4

Or

(b) Consider a situation where the mean arrival rate (1) is one customer every4 minutes and the mean service time (m) is $2\frac{1}{2}$ minutes. Calculate the average number of customers

in the system, the average queue length and the time taken by a customer in the system and the average time a customer waits before being served.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. Solve by Big M method.

(a) Maximize $Z = x_1 + 2x_2 + 3x_3 - x_4$

Subject to the constraints

$x_1 + 2x_2 + 3x_3 = 15$
$2x_1 + x_2 + 5x_3 = 20$
$x_1 + 2x_2 + x_3 + x_4 = 10$

Or

(b) Maximize $z = 4x_1 + 3x_2$

Subject to

$2x_1 + 3x_2 \leq 6$
$-3x_1 + 2x_2 \leq 3$
$2x_2 \leq 5$
$2x_1 + x_2 \leq 4$

17. (a) Four different jobs can be done on four different machines and take down time costs are prohibitively high for change overs. The following matrix gives the cost in rupees of producing job *i* on machine *j*:

Machine

Jobs	M_1	M_2	M_3	M_4
J_1	5	7	11	6
J_2	8	6	9	6
J_3	4	7	10	7
J_4	10	4	8	3

How should the jobs be assigned to the various machines so that the total cost is minimized?

Or

(b) Write the comparison between AP and TP.

18. (a) Explain the basic features and advantages of network models.

Or

(b) Develop a network diagram for the project specified below:

Activity	Immediate predecessor activity
A	–
B	A
C,D	B
E	C
F	D
G	E,F

19. (a) The following details are available regarding a project:

Activity	Immediate predecessor activity	Duration (weeks)
A	–	3
B	A	5
C	A	7
D	B	10
E	C	5
F	D,E	4

Determine the critical path, the critical activities and the project completion time.

Or

(b) Write the similarities and differences between CPM and PERT.

20. (a) Solve the game with the following pay-off matrix:

		Player B			
		I	II	III	IV
Player A	1	4	2	3	6
	2	3	4	7	5
	3	6	3	5	4

Or

(b) Find the optimal order quantity for a product for which the price breaks are as follows:

Quantity	Price in Rs. per unit
$0 \leq q < 100$	20
$100 \leq q < 200$	18
$200 \leq \infty$	16

The monthly demand for the product is 400 units. The storage cost is 20% of the unit cost and the ordering cost is Rs. 25 per order.

———————

(6 pages)

Reg. No. : .....

Code No. : 20239 E **Sub. Code : SMCA 51/ AMCA 51**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Fifth Semester

Computer Application — Core

SOFTWARE ENGINEERING

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. ———— software is designed to be sold on open market.
   (a) Custom software
   (b) Generic software
   (c) Embedded software
   (d) None of these

2. ———— are also known as clients.

(a) Customers (b) Users

(c) Developers (d) Managers

3. ———— is a process by which a software engineer learns background information.

(a) Domain analysis

(b) Requirement analysis

(c) Specification analysis

(d) Information analysis

4. ———— is a statement about what the proposed system will do.

(a) Task (b) Order

(c) Requirement (d) Interface

5. ———— is used to show how two classes are related to each other.

(a) Association (b) Generalization

(c) Multiplicity (d) None of these

6. Aggregations are specified using a ———— symbol.

(a) rectangle (b) circle

(c) diamond (d) line

7. In ———— design, you start with very high level structure of the system.

(a) top-down (b) bottom-up

(c) architecture (d) class

8. ———— occurs when there are inter dependencies between one module and another.

(a) Cohesion (b) Coupling

(c) Utility (d) Network

9. ———— chart shows the sequence in which tasks must be completed.

(a) PERT (b) Gantt

(c) Earn value (d) None

10. ———— is the process of deciding the sequence a set of activities will be performed.

(a) Scheduling (b) Tracking

(c) Testing (d) Planning

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Discuss the nature of software.

Or

(b) What is an object? Explain with example.

12. (a) What are functional requirements? Explain.

Or

(b) Give a brief account on generalization.

13. (a) What is reflexive association? Explain.

Or

(b) Explain sequence diagrams.

14. (a) Define coupling. What are the different types of coupling?

Or

(b) Explain Broker architectural pattern.

15. (a) Discuss project scheduling and tracking.

Or

(b) Explain the roles of development team.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Explain in detail the activities common to software projects.

Or

(b) Explain the features of object oriented language.

17. (a) Discuss and explain the techniques for analyzing and gathering requirements.

Or

(b) Explain about difficulties and risks in domain and requirements analysis.

18. (a) Explain aggregation and interfaces.

Or

(b) Explain State diagrams.

19. (a) Explain MVC architectural pattern.

Or

(b) Explain the process of writing a good design document.

20. (a) Explain the defects in ordinary algorithms.

Or

(b) Explain the defects in numerical algorithms.

———————

(6 pages)

Reg. No. : .....

Code No. : 20240 E **Sub. Code : SMCA 52/ AMCA 52**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Fifth Semester

Computer Application — Core

WEB TECHNOLOGY

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. MIME stands for

   (a) Multipurpose Internet Mail Extra

   (b) Multipurpose Internet mail End

   (c) Multipurpose Internet Mail Email

   (d) Multipurpose Internet Mail Extensions

2. The communication protocol used by internet is

(a) HTTP (b) WWW

(c) TCP/IP (d) FTP

3. Which is the correct syntax to include comment in an HTML document?

(a) // (b) /*Comment*/

(c) //Comment// (d) <!--Comment-->

4. Which HTML tag is used to define a hyperlink?

(a) <a> (b) <h>

(c) <hyperlink> (d) both (a) and (b)

5. Which of the following is not JavaScript data types?

(a) undefined (b) number

(c) boolean (d) float

6. Among the following, which one is a ternary operator in Java Script?

(a) # (b) ::

(c) &: (d) ?:

7. XML is designed to store data and ————————

(a) Design (b) Verify

(c) Both (a) and (b) (d) Transport

8. In schema, data type can be specified using

(a) Type (b) Data type

(c) Dt:type (d) Data:type

9. Which of the following gives the path for CGI script?

(a) remote_host (b) remote_addr

(c) query_string (d) path_info

10. CGI stands for ————————

(a) Common Gigabyte Interface

(b) Common Gateway Interface

(c) Common Gaming Interface

(d) Common Gateway Internet

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Briefly explain about web server and clients.

Or

(b) What is meant by URL? Explain.

12. (a) What is HTML? Explain some basic tags.

Or

(b) Explain in detail about image tag and its attributes.

13. (a) Discuss about looping statements in JavaScript.

Or

(b) Explain various operators involved in JavaScript.

14. (a) Explain the use of XML namespace.

Or

(b) How to use DTD in an XML?

15. (a) Explain Servlet life cycle.

Or

(b) What is server-side CGI script?

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Describe in detail about www.

Or

(b) Explain in detail about HTTP protocol.

17. (a) Describe in detail about various form controls.

Or

(b) Explain in detail about list tag.

18. (a) Explain in detail about functions in JavaScript.

Or

(b) Explain in detail about conditional statements in JavaScript.

19. (a) Explain briefly about XML schema.

Or

(b) Explain in detail about elements and attributes in XML.

20. (a) Describe in detail of servlet architecture.

Or

(b) Discuss about request specific environmental variables.

———————

(6 pages)

Reg. No. : .....

Code No. : 20242 E **Sub. Code : SMCA 61**

B.C.A. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Sixth Semester

Computer Application — Core

OPERATING SYSTEMS

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. ———— increases CPU utilization by organizing jobs so that the CPU always has one to execute.

   (a) Multiprocessing (b) Multiprogramming

   (c) Batching (d) Time sharing

2. ———— define the ways to solve user's computing problems.

(a) Operating system

(b) Application programs

(c) Hardware

(d) I/O devices

3. The ———— scheduler must select a new process for CPU frequently

(a) Short-term (b) Long-term

(c) CPU scheduler (d) Stack

4. Switching the CPU from one process to another is known as ————

(a) Save state (b) Change state

(c) Restore state (d) Context switch

5. A ———— is a semaphore with an integer value that can range only between 0 and 1.

(a) counting semaphore (b) binary semaphore

(c) bit semaphore (d) mutex

6. ADT stands for ————

(a) Abstract Data Type

(b) Absolute Data Type

(c) Acyclic Data Type

(d) Advanced Data Type

7. ———— is a memory management scheme that permits the physical address space of a process to be non-contiguous.

(a) Segmentation (b) Fragmentation

(c) Sequencing (d) Paging

8. Which register is used to indicate the size of the table?

(a) PTLR (b) PTBR

(c) PMLTR (d) PMBTR

9. A file is a named collection of related information that is recorded on ————

(a) secondary storage (b) buffer

(c) internal storage (d) all the above

10. ———— refers to the high page-fault rate or high paging activity.

(a) Prepaging (b) Fragmentation

(c) Thrashing (d) Locality model

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Describe the advantages of clustered systems.

Or

(b) What is OS? Write the functions of operating system.

12. (a) What is the meaning of IPC? Explain.

Or

(b) Write and explain the CPU scheduling STFC algorithm.

13. (a) Discuss about critical regions.

Or

(b) What is semaphore? Write the uses of semaphores.

14. (a) Write about page replacement.

Or

(b) Write about contiguous memory allocation.

15. (a) Explain any one of the file access method.

Or

(b) Write about RAID.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Explain about mainframe systems and desktop systems.

Or

(b) Write in detail about :

(i) Time sharing system

(ii) Multiprocessor system.

17. (a) Explain about real time scheduling.

Or

(b) Write the algorithm of deadlock avoidance. Discuss it.

18. (a) Explain how to implement semaphore.

Or

(b) What do you mean by critical section problem? Explain.

19. (a) Discuss about paging with segmentation.

Or

(b) Write about demand paging of virtual memory.

20. (a) Explain in details about directory structures.

Or

(b) Explain the following file operation :

(i) creating a file

(ii) writing a file

(iii) reading a file

(iv) repositioning within a file

(v) deleting a file

(vi) truncating a file.

———————

(6 pages)

Reg. No. : .....

Code No. : 20243 E **Sub. Code : SMCA 62**

B.C.A. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Sixth Semester

Computer Application — Core

COMPUTER NETWORKS

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. ———— networks have a single communication channel that is shared by all the machines on the network.

(a) Point-to-point (b) Broadcast

(c) Packet (d) Frames

2. FDDI is another example of a ———— network.

(a) Bus (b) Star

(c) Mesh (d) Frames

3. ———— consists of a stiff copper wire as the core, surrounded by an insulating materials.

(a) Fiber optic (b) Twisted pair cable

(c) Coaxial cable (d) Radio waves

4. Which transmission media has the highest transmission speed in a network?

(a) coaxial cable (b) twisted pair cable

(c) optical fiber (d) electrical cable

5. The data link layer divides the stream of bits received from the network layer into data units called

(a) segments (b) frames

(c) datagrams (d) messages

6. The ———— layer detects and retransmits damaged or lost frames.

(a) network (b) session

(c) transport (d) datalink

7. The routing algorithm is that part of the ———— layer.

(a) physical (b) data link

(c) network (d) session

8. Name the routing algorithm in which every incoming packet is sent out on every outgoing line except the one it arrived on

(a) Shortest path (b) Flooding

(c) Dijikstra (d) Optimal

9. ———— refers to the process of creating messages and answers.

(a) Send (b) User agents

(c) Composition (d) Spam

10. ———— is a character-for character or bit-for-bit transformation.

(a) Code (b) Date

(c) Cipher (d) Text

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Compare broadcast links with point-to-point links.

Or

(b) Comment on bus and ring topology.

12. (a) Write note on magnetic media.

Or

(b) Describe the characteristics of radio transmission.

13. (a) Give an algorithm for computing checksum.

Or

(b) Explain the process of unrestricted simplex protocol.

14. (a) Compare adaptive routing algorithm with non-adaptive routing algorithm.

Or

(b) Mention the policies that affect congestion.

15. (a) Illustrate the fundamental cryptographic principles.

Or

(b) Write note on SMTP.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 600 words.

16. (a) Explain the OSI reference model.

Or

(b) Examine the features of LAN.

17. (a) Discuss the features of fiber optic cable.

Or

(b) Write note on electromagnetic spectrum.

18. (a) Explain about error-detecting codes.

Or

(b) Describe the features of carrier sense multiple access protocols.

19. (a) Discuss the distance vector routing algorithm.

Or

(b) Illustrate the steps in making a remote procedure call.

20. (a) Write note on DES.

Or

(b) Explain the concept digital signatures using message digests.

———————

(6 pages)

Reg. No. : .....

Code No. : 20244 E **Sub. Code : SMCA 63**

B.C.A. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Sixth Semester

Computer Application — Core

COMPUTER GRAPHICS

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The device used to provide hardcopy is

   (a) CRT (b) Computer console

   (c) Printer (d) Card reader

2. Any data and instruction entered in the memory of a computer is

   (a) storage (b) output

   (c) input (d) information

3. Which algorithm is a faster method for calculating pixel positions?

   (a) Bresenham's line algorithm

   (b) Parallel line algorithm

   (c) Mid-point algorithm

   (d) DDA line algorithm

4. If we want to recolor an area that is not defined within a single color boundary is known as

   (a) Boundary-fill algorithm

   (b) Parallel curve algorithm

   (c) Flood-fill algorithm

   (d) None of the above

5. The process of repositioning an object along a circular path is called

   (a) Rotation (b) Scaling

   (c) Translation (d) Transformation

6. Which of the following device is used for the 3D positioning of an object?

   (a) Trackball (b) Mouse

   (c) Spaceball (d) All of the above

7. Clipping in computer graphics is primarily used for

(a) Zooming

(b) Copying

(c) Removing objects and lines

(d) All of the above

8. The Cohen-Sutherland algorithm divides the two-dimensional space in how many regions?

(a) 4 (b) 8

(c) 9 (d) 23

9. Which surface algorithm is based on perspective depth?

(a) Depth comparison

(b) Z-buffer or depth-buffer algorithm

(c) Subdivision method

(d) Back-face removal

10. The types of hidden surface removal algorithm are

(a) Depth comparison, Z-buffer, back-face removal

(b) Scan line algorithm, priority algorithm

(c) BSP method, area subdivision method

(d) All of these

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) List the applications of computer graphics and discuss any one.

Or

(b) Differentiate raster scan display and random scan display.

12. (a) Explain the DDA line drawing algorithm.

Or

(b) Explain boundary fill algorithm with merits and demerits.

13. (a) How shearing transformations in 3D graphics are achieved?

Or

(b) Explain in detail about 2D scaling.

14. (a) Differentiate between window port and view port.

Or

(b) Write notes on point clipping.

15. (a) Explain briefly about back face removal algorithm.

Or

(b) Write short notes on object space methods.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Explain the working of refresh Cathode-ray tubes with a diagram.

Or

(b) Draw the architecture and explain working of raster scan display system.

17. (a) Explain the steps in midpoint circle drawing algorithm with suitable diagram.

Or

(b) Discuss in detail Bresenham's line-drawing algorithm.

18. (a) Explain about 2D composite transformation.

Or

(b) What is shear transformation in 2D? Explain X-shear and Y-share with example.

19. (a) Write down the procedure for the Cohen-Sutherland line-clipping algorithm.

Or

(b) Briefly explain about Sutherland Hodgeman polygon clipping algorithm.

20. (a) Explain in detail about Z-buffer algorithm.

Or

(b) Discuss Hidden surface elimination and various coherences.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20246 E **Sub. Code : SACA 21/ AACA 21**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Second Semester

Computer Application — Allied

MATHEMATICAL FOUNDATION FOR COMPUTER SCIENCE

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. The relation R on a set A is ———— if whenever aRb and bRc then aRc

(a) reflexive (b) symmetric

(c) transitive (d) anti-symmetric

2. If A has m elements and B has n elements then $A \times B$ has ———— elements.

(a) m^n (b) n^m

(c) mn (d) $\frac{m}{n}$

3. A function is to be ———— if each $b \in B$, there exists of at most one $a \in A$ with $f(a) = b$

(a) one-one (b) one to many

(c) onto (d) bijection

4. A function is to be ———— if every element of A assigns each element to itself.

(a) Identity function (b) onto function

(c) one-one function (d) constant function

5. Which of the following is not a proposition?

(a) Roses are red (b) 1+1 = 2

(c) Who are you (d) Kolkata is in India

6. The converse of $p \to q$ is ————

(a) $\sim p \to \sim q$ (b) $q \to p$

(c) $\sim q \to \sim p$ (d) $p \to q$

7. The degree of the vertex is one, its is known as ———— vertex.

(a) isolated (b) pendent

(c) loop (d) parallel

8. In a graph, total number of odd-degree vertices is ————

(a) odd (b) even

(c) positive (d) negative

9. A cycle-free graph is known as ————

(a) connected (b) circuit

(c) path (d) tree

10. In a graph a node that is not adjacent to another node is called ———— node.

(a) incident (b) adjacent

(c) isolated (d) single

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Find $A \times B$ and $B \times A$ for $A = \{a, b\}$ and $B = \{a, c, d\}$.

Or

(b) Explain binary relation with example.

12. (a) If a function $f_1 : R \to R$ and $f_2 : R \to R$, in which $f_1(x) = x$ and $f_2(x) = \frac{1}{x} - x$. Determine the functions $f_1 + f_2$ and $f_1 f_2$.

Or

(b) Let $f : R \to R$ be defined by $f(x) = 3x - 4$. Find f^{-1}.

13. (a) Define converse, contrapositive and inverse.

Or

(b) Verify the proposition $P \vee \sim (p \wedge q)$ is a tautology

14. (a) Define self-loop and parallel edges with example.

Or

(b) Draw a Peterson graph.

15. (a) Define union and intersection of two graphs with example.

Or

(b) Define full binary tree with example.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Prove that $A \times (B \cup C) = (A \times B) \cup (A \times C)$.

Or

(b) Let Z^* be the set of all non-zero integers and R be the relation on Z^* such as $(a, b) \in R$ if a is the factor of b. Investigate R for reflexive, symmetric, antisymmetric or transitive.

17. (a) Let $f : A \to B$ and $g : B \to C$ be two functions. Prove that if both f and g are surjective then $g \circ f$ is surjective.

Or

(b) Show that the functions $f(x) = x^3$ and $g(x) = x^{1/3}$ for all $x \in R$ are inverse of each other.

18. (a) Prove that $p \wedge (q \vee r) = (p \wedge q) \vee (p \wedge r)$.

Or

(b) Let p : Oviya is rich, q : Oviya is happy. Give a simple verbal sentence which describes each of the following statements.

(i) $p \wedge q$

(ii) $q \rightarrow p$

(iii) $p \leftrightarrow \sim q$

(iv) $\sim \sim p$

19. (a) State and prove Handshaking theorem.

Or

(b) Explain the following graphs with example.

(i) directed graph

(ii) weighted graph

(iii) complete graph

(iv) regular graph

20. (a) Explain the following with example.

(i) child node

(ii) leaf node

(iii) internal node

(iv) siblings

Or

(b) Explain sum and product of two graphs with example.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20247 E **Sub. Code : SACA 31/ AACA 31**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Third Semester

Computer Applications – Allied

DATA STRUCTURES

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer:

1. A _____ consists of finite set of elements node.

   (a) Root

   (b) Tree

   (c) Branches

   (d) Binary

2. _____ is useful for report generation.

(a) Responding queries easily

(b) Making searches easily

(c) Sorting

(d) All of these

3. A linked list is a _____ data structure.

(a) Linear (b) Hashed

(c) Dynamic (d) Single

4. In doubly linked list each node contains _____ fields.

(a) 2 (b) 3

(c) 1 (d) 4

5. A _____ is a list in descending chronological sequence.

(a) Stack

(b) Queue

(c) Linked list

(d) All of these

6. _____ removes the items at the top of the stack.

(a) Push (b) Insert

(c) Pop (d) Stack

7. _____ is a hierarchical data structure.

(a) List (b) Stack

(c) Queue (d) Tree

8. In heap the tree is a _____ tree.

(a) Complete binary

(b) Skewed

(c) Binary

(d) All the above

9. The _____ degree of any vertex in a simple graph with n vertices is n.

(a) Minimum (b) Maximum

(c) Simple (d) All of these

10. The _____ of a node is its distance from the root.

(a) Level (b) Leaf

(c) Child (d) Node

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write a model for an abstract data type.

Or

(b) Explain Pseudo code.

12. (a) Explain the algorithms of linked list.

Or

(b) Explain concept of linked list.

13. (a) Write about queue operations.

Or

(b) Explain the basic stack operations.

14. (a) Explain Binary tree with diagram.

Or

(b) Write about expression trees.

15. (a) Explain Quick Sort.

Or

(b) Write about Networks.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain Hashed List Search with example.

Or

(b) Write details about Collision Resolution.

17. (a) Write about processing a linked list.

Or

(b) Explain linear list concepts.

18. (a) Explain stack applications.

Or

(b) Describe about queue linked list design.

19. (a) Explain the binary tree traversals.

Or

(b) Explain heap structure.

20. (a) Describe graph storage structure.

Or

(b) Discuss merge sat with example.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20248 E **Sub. Code : SACA 41/ AACA 41**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Fourth Semester

Computer Application – Allied

ACCOUNTING SOFTWARE – TALLY

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. We can change the Company Information from

   (a) Company Info → Back up

   (b) Company Info → Alter

   (c) Company Info → Split Company Data

   (d) Company Info → Update

2. To change Current Date from Gateway of Tally press the key

(a) F1 (b) F5

(c) F2 (d) F9

3. How many inbuilt accounts group are in tally by default?

(a) 29 (b) 31

(c) 25 (d) 34

4. How many space types of Measurement Units we can create in Tally?

(a) 2 (b) 3

(c) 5 (d) Unlimited

5. For reconciliation of Bank press

(a) F12 (b) F10

(c) F5 (d) F6

6. TDS deduction entry can be made through

(a) Payment voucher

(b) Journal voucher

(c) Receipt voucher

(d) All of these

7. To view the TDS report, go to

   (a) Display → Statements of Accounts → TDS outstanding → TDS computation

   (b) Accounts Book → TDS outstanding → TDS computation

   (c) Display → TDS outstanding → TDS computation

   (d) None of the above

8. How can we see VAT Reports?

   (a) Gateway of Tally → Display

   (b) Gateway of Tally → VAT Reports

   (c) Gateway of Tally → Display → Statutory Info

   (d) Gateway of Tally → Display → Statutory Reports

9. What is the full form of TCS?

   (a) Tax Collected by Staff

   (b) Tax Consumption at Source

   (c) Tax Collected at Source

   (d) Tax Collected from Sales

10. We can see list of Memorandum Vouchers from

(a) Cash/Bank Books

(b) Exception Reports

(c) Accounts Book

(d) Trail Balance

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write short note on features of POS.

Or

(b) Explain Profit and Loss Account in detail.

12. (a) Write short note on VAT Rate.

Or

(b) Write short note on VAT.

13. (a) Elucidate Service Tax in Tally.

Or

(b) How to create sales ledgers for TCS.

14. (a) Write short note on Dealer Excise report.

Or

(b) Write short note on E-Returns.

15. (a) Elucidate Payroll info in Tally.

Or

(b) Write short note on Payroll with PF and ESI.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain components of Tally opening screen.

Or

(b) Discuss Stock Groups in detail.

17. (a) Explain the following Vouchers:

(i) Receipt voucher

(ii) Payment voucher

(iii) Contra voucher

Or

(b) Describe the VAT composition report.

18. (a) Explain the various steps in generating Service Tax reports in Tally.

Or

(b) Explain TDS computation report.

19. (a) Explain about Excise stock register.

Or

(b) Explain about Dealer excise opening stock.

20. (a) Explain Single Employee Groups in Tally.

Or

(b) Explain unit of attendance in Tally.

———————

(6 pages)

Reg. No. : .....

Code No. : 20249 E **Sub. Code : SSCA 3 A/ ASCA 31**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Third Semester

Computer Application

Skill Based Subject — PROGRAMMING WITH PHP AND MYSQL

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Variable name in PHP starts with

(a) ! (Exclamation) (b) $ (Dollar)

(c) & (Ampersand) (d) # (Hash)

2. PHP scripts are enclosed within ————————

(a) <php> … </php> (b) <?php … ?>

(c) ?php … ? php (d) …

3. Which of the following function is used to get the value of the previous element in an array?

(a) last( ) (b) before( )

(c) prev( ) (d) previous( )

4. What will be the output of the following PHP code?

```
<?php
$fruits=array("apple", "orange", "banana");
echo(next($fruits));
echo(next($fruits));
?>
```

(a) orangebanana (b) appleorange

(c) orangeorange (d) appleapple

5. Which function is used to read a file character by character?

(a) Fopen( ) (b) fred( )

(c) fgetc( ) (d) file( )

6. The file_get_contents function returns the entire content of a file as

(a) integer (b) string

(c) character (d) boolean

7. Which of the following is available in MySQL?

(a) CREATE VIEW

(b) CREATE SCHEMA

(c) CREATE TRIGGER

(d) CREATE DATABASE

8. To remove duplicate rows from the result set of a select use the following keyword

(a) NO DUPLICATE (b) UNIQUE

(c) DISTINCT (d) None of the above

9. The updated MySQL extension released with PHP 5 is typically referred to as

(a) MySQL (b) mysql

(c) mysqli (d) mysqly

10. If there is no error, then what will the error( ) method return?

(a) TRUE (b) FALSE

(c) EmptyString (d) 0

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) List and explain any five features of PHP.

Or

(b) How to control loop iterations with break and continue statements?

12. (a) How to store data in cookies?

Or

(b) How do you define and invoke user defined functions in PHP?

13. (a) Elaborate on file opening and file closing functions in PHP with example.

Or

(b) What is the use of fscanf( ) function, give example?

14. (a) Describe the prerequisites for MYSQL connection.

Or

(b) Enumerate and explain the aggregate functions in MYSQL.

15. (a) Write down the usage and explain of REPEAT( ) function in MYSQL.

Or

(b) How will you validate date in MYSQL?

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Write a "Hello world" script in PHP and explain the code.

Or

(b) Elaborate on varius operators supported by PHP.

17. (a) Illustrate (i) How to execute external program from your PHP script? (ii) Ay four array functions in PHP.

Or

(b) Distinguish between GET and POST methods.

18. (a) How to read and write binary files in PHP?

Or

(b) Analyse the use of parse-ini-file in PHP.

19. (a) How do you create tables and insert rows in tables?

Or

(b) Compare inner join and outer join with examples.

20. (a) How to connect MYSQL database with PHP? Give example code.

Or

(b) What are the ways to format numeric data?

———————

(6 pages) **Reg. No. :** .....

Code No. : 20250 E **Sub. Code : SSCA 4 A/ ASCA 41**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Fourth Semester

Computer Application

Skill Based Subject — MICROPROCESSOR

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A group of four bits is known as ————

   (a) Bit (b) Byte

   (c) Word (d) Nibble

2. The ———— register is used to perform arithmetic and logic operations.

   (a) Program counter (b) Stack pointer

   (c) Accumulator (d) Flag

3. Dynamic memory stores the bit as a ————————

(a) signal (b) voltage

(c) charge (d) word

4. MPU stands for ————————

(a) Macro Processing Unit

(b) Micro Processing Unit

(c) Macro Programming Unit

(d) Micro Programming Unit

5. The process of breaking the given task into small units that can be built independently is called ————————

(a) modular-design approach

(b) top-down approach

(c) bottom-up approach

(d) simple-design approach

6. What is the result obtained when the rotate instruction RLC is performed on the data 0000 1000?

(a) 0100 0000 (b) 0000 0100

(c) 0000 0001 (d) 0001 0000

7. ———— is a procedure in which various information is passed between a calling program and a subroutine.

(a) Parameter passing (b) Program passing

(c) Instruction passing (d) Data passing

8. When the instruction RET is executed the stack pointer is incremented by ————

(a) 0 (b) 1

(c) 2 (d) 3

9. Multiplication can be performed by ————

(a) repeated addition

(b) repeated subtraction

(c) subtraction followed by addition

(d) addition followed by subtraction

10. The instruction that performs the function of adjusting a BCD sum in the 8085 instruction set is ————

(a) DCX (b) DAA

(c) ADI (d) ANI

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) List down the various types of microcomputers and discuss about each type briefly.

Or

(b) What is an instruction? Explain the various types of instruction with suitable examples.

12. (a) What is the use of READ/WRITE memory? Explain its types.

Or

(b) Briefly explain the externally initiated signals and interrupts.

13. (a) Discuss the various branch operations of 8085 instruction set.

Or

(b) What is the difference between LXI and MVI instructions? Explain LXI instructions with appropriate examples.

14. (a) Draw a flowchart and write a program to set up a hexadecimal counter.

Or

(b) Write down a program to implement traffic signal controller with appropriate flowchart.

15. (a) Write a program to convert an 8-bit binary number 9FH to ASCII hex code (Assume that the number is stored in memory location XX50H).

Or

(b) Write down the program and subroutine to subtract two 16-bit numbers with carry.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) What is a microprocessor? Describe the role of other components associated to a microprocessor in a system.

Or

(b) Give a detailed account on

(i) 8085 data format

(ii) 8085 instruction word size.

17. (a) What is the function of ROM? Explain its types.

Or

(b) Write a detailed account on the 8085 microprocessor.

18. (a) Explain the various arithmetic operations of 8085 instruction set with suitable examples.

Or

(b) Describe the functions of arithmetic operations related to memory with examples.

19. (a) List down the common errors in a counter program and debugging with an illustration.

Or

(b) Briefly explain the following :

(i) Subroutine documentation and parameter passing

(ii) Restart (RST) instructions

(iii) Conditional call instructions

(iv) Conditional return instructions.

20. (a) A binary number is stored in memory location BINBYT. Convert the number into BCD and store each BCD as two unpacked BCD digits in the output buffer. To perform this task, write a main program and two subroutines - one to supply the powers of ten and the other to perform the conversion.

Or

(b) Write down the program and subroutine to multiply tow 8-bit unsigned numbers.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20253 E **Sub. Code : SNCA 4 A/ ANCA 41**

U.G. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Fourth Semester

Computer Application – Non Major Elective

INTRODUCTION TO INTERNET WITH HTML

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Protocol is a set of

   (a) Formats

   (b) Procedures

   (c) Rules

   (d) None of the mentioned

2. URL is ————————

(a) web address

(b) source code

(c) user's address

(d) an attribute

3. Which of the following tag is used for inserting the largest heading in HTML?

(a) <h3> (b) <hl>

(c) <h5> (d) <h6>

4. Which of the following tag is used to mark a beginning of paragraph?

(a) <td> (b)

(c) <p> (d) <tr>

5. Which one of the following is a type of lists that HTML supports?

(a) Ordered lists

(b) Unordered lists

(c) Description lists

(d) All of the above

6. What is the default item marker in unordered lists of HTML?

(a) Circle (b) Marker

(c) Disc (d) None of the above

7. What is the default type of 'type' attribute of <input> element?

(a) Text (b) Password

(c) Numerals (d) Special Characters

8. A file with a ———————— extension is a dynamic HTML file

(a) .xhtml (b) .dhtml

(c) .htm. (d) .dll

9. ———————— is a collection of frames in browser window

(a) Frameset (b) Multiple frames

(c) Frame (d) Set frame

10. Which is not a CSS type?

(a) Inline (b) External

(c) Internal (d) Outline

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What in network? Explain its types.

Or

(b) Explain the Gopher in IT.

12. (a) What is HTML? Write it history.

Or

(b) How to links are used in HTML?

13. (a) Discuss about formatting tags in HTML.

Or

(b) What is the unordered list in HTML?

14. (a) Write style applied for text size.

Or

(b) What text format tags available in HTML?

15. (a) How to create for your resume webpage?

Or

(b) What is forms in HTML?

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss in details about computer in business.

Or

(b) Illustrate Internet Technology.

17. (a) Explain the following :

(i) Head

(ii) Body section.

Or

(b) What is tags? How it in declare in HTML?

18. (a) Discuss about ordered list in HTML with example.

Or

(b) Write in details about table tags in HTML.

19. (a) Discuss about changing color in webpage.

Or

(b) Explain in detail about font style in DHTML

20. (a) Write in details about nested frames in html.

Or

(b) How to create webpage for your department using form elements?

———————

(6 pages)

Reg. No. : .....

Code No. : 20255 E **Sub. Code : SECA 5 A/ AECA 51**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Fifth Semester

Computer Application

Major Elective — ARTIFICIAL INTELLIGENCE

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A way of separating important features and variations from the many unimportant ones is

   (a) search (b) knowledge

   (c) abstraction (d) none

2. The first requirement of a good control strategy is

(a) cause motion (b) systematic

(c) expert system (d) none

3. Combining the advantages of both depth first and breadth first search into a single method called

(a) best first search

(b) depth first search

(c) breadth depth search

(d) breadth first search

4. A list of tasks a system could perform is called

(a) node (b) agenda

(c) cycle (d) none

5. Truths in some relevant world

(a) fact (b) knowledge

(c) representation (d) none

6. Which is not the commonly used programming language for artificial intelligence?

(a) PROLOG (b) Java

(c) LISP (d) Perl

7. A rule which encode knowledge about how to respond to certain input configuration is

(a) forward rule (b) backward rule

(c) both (a) and (b) (d) none

8. Which of the following symbol represents "for every"?

(a) $\rightarrow$ (b) $\forall$

(c) $\wedge$ (d) $\mathcal{F}$

9. The minimax search procedure is a

(a) depth-first (b) depth-limited

(c) both (a) and (b) (d) none

10. The alpha-beta pruning required ———— threshold values.

(a) two (b) three

(c) four (d) five

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) State the problem statement to play chess.

Or

(b) What is heuristic? Explain nearest neighbor heuristic in detail.

12. (a) Explain generate and test algorithm with example.

Or

(b) Explain steepest ascent Hill climbing algorithm in detail.

13. (a) Explain how knowledge is represented in AI?

Or

(b) Explain unification algorithm in detail.

14. (a) Write in detail about declarative knowledge.

Or

(b) With suitable example explain the representation in logic and PROLOG.

15. (a) What do you meant by book moves? Explain.

Or

(b) Write a short notes on waiting for quiescence.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) What are the seven major steps to analyze the problem characteristics? Explain in detail.

Or

(b) Explain in detail about the characteristics of a production system.

17. (a) Explain best - first search algorithm in detail.

Or

(b) Explain how means - ends analysis process detects the differences between the current state and the goal state.

18. (a) Explain various approaches in knowledge representation.

Or

(b) Explain resolution procedure in detail.

19. (a) Discuss matching process in detail.

Or

(b) Explain about forward and backward reasoning.

20. (a) Describe about the minimax search procedure.

Or

(b) Describe about alpha-beta cut-off with an example.

———————

(6 pages)

Reg. No. : .....

Code No. : 20257 E **Sub. Code : SECA 5 C/ AECA 53**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Fifth Semester

Computer Application

Major Elective — CYBER SECURITY

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. During the ———— phase, the objectives, constraints and scope of the project are specified.

   (a) analysis (b) design

   (c) investigation (d) implementation

2. The technology that aids in gathering information about a person or organization without their knowledge is ————————

(a) malicious code (b) bot

(c) spyware (d) spoofing

3. ———————— is a device that selectively discriminates against information flowing into and out of the organization.

(a) Demilitarized zones

(b) Firewalls

(c) Proxy server

(d) IDPS

4. The process of validating a supplicant's purported identity is ————————

(a) authentication (b) authorization

(c) accountability (d) identification

5. Which one is a network tool that collects and analyses the copies of packets from the network?

(a) packet sniffers (b) port scanners

(c) firewall (d) honey pots

6. Which one can prevent man-in-the-middle attack?

(a) digital signatures

(b) digital certificates

(c) public-key encryption

(d) cryptanalysis

7. ———— is offsite computing that uses internet connection or other connection mechanisms.

(a) Telenetworking (b) Telecomputing

(c) Outsourcing (d) Telecommuting

8. Which one is a planning tool used to create the project plan?

(a) Blueprint

(b) Work breakdown structure

(c) Cost benefit analysis

(d) Bull's eye model

9. Which program focuses on building trusted networks including biometrics and PKI?

(a) SCNS (b) SCNA

(c) SCNP (d) SSCP

10. ———— is a set of security tests and evaluations that simulate attacks by a malicious external sources

(a) vulnerability test (b) security test

(c) penetration test (d) all the above

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Discuss information security : Is it an art or a science.

Or

(b) Write brief note on cross-site scripting, SQL injection and information leakage.

12. (a) Write short note on continuity strategies for business.

Or

(b) Explain briefly about access control.

13. (a) Discuss about honeypots.

Or

(b) Write short note on :

(i) Substitution cipher

(ii) Transposition cipher.

14. (a) Name the seven major sources of physical loss.

Or

(b) Give some details on the work breakdown structure of developing a project plan.

15. (a) Write down the tasks performed when an employee prepares to leave the organization.

Or

(b) What is penetration testing? State the reasons for using it.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Explain the critical characteristics of information.

Or

(b) Explain the term :

(i) spoofing

(ii) phishing

(iii) sniffers

(iv) pharming.

17. (a) Explain in detail about incident response planning.

Or

(b) Explain the mechanisms of all the access control approaches.

18. (a) Explain the security tools :

(i) port scanners

(ii) packet sniffers

(iii) honeypots.

Or

(b) Explain the three steps of the RSA algorithm with an example.

19. (a) Explain the ways of securing mobile and portable systems.

Or

(b) Explain the major steps in executing the information security project plan.

20. (a) Explain Certified Information Systems Security Professional (CISSP) and System Security Certified Practitioner (SSCP) .

Or

(b) Explain how will you assess the vulnerabilities and remediate them.

———————

(6 pages)

Reg. No. : .....

Code No. : 20260 E **Sub. Code : SECA 6 B**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Sixth Semester

Computer Application

Major Elective — SOFTWARE PROJECT MANAGEMENT

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The two essential steps common to the development of computer programs are ————

(a) Analysis and coding

(b) Analysis and design

(c) Analysis and testing

(d) Coding and testing

2. ———— metrics are useful estimators for software.

(a) UFP (b) SLOC

(c) Both (d) None

3. SDP stands for ————

(a) Software Design Plan

(b) Software Development Plan

(c) Software Data Phase

(d) Software Design Phase

4. A ———— is a relatively independent abstraction of a system.

(a) view (b) model

(c) pattern (d) template

5. Who facilitates the exchange of information and process guidance both to and from project practitioners?

(a) SEPA (b) PRA

(c) SEEA (d) All

6. ———— team is responsible for planning the effort.

(a) Software architecture team

(b) Software management team

(c) Software development team

(d) Software assessment team

7. The project environment evolve through ———— discrete stages.

(a) 5 (b) 4

(c) 2 (d) 3

8. Software work authorized to create, modify or obsolesce components within a configuration baseline is called ————

(a) Software configuration order

(b) Software control order

(c) Software change order

(d) Software charge order

9. Only about ———— of software development effort is devoted to programming.

(a) 10% (b) 15%

(c) 20% (d) 25%

10. 60% of the errors are caught during ————————

(a) Reviews (b) Audits

(c) Inspections (d) Walk thoughts

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What are the skills required by a successful software project manager?

Or

(b) Explain software processes in detail.

12. (a) Describe the two stages of software life cycle.

Or

(b) Explain the purpose of vision document in detail.

13. (a) Define workflow. Explain its types in detail.

Or

(b) Write short notes on cost and schedule estimating process.

14. (a) Discuss the role of Configuration Control Board (CCB) .

Or

(b) Explain the seven core metrics that should be used on all software projects.

15. (a) List out the quotes of modern software economics.

Or

(b) List out the 80/20 lessons of software management experience.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Discuss the ways of reducing software product size.

Or

(b) Describe the performance of conventional software management in detail.

17. (a) Explain elaboration phase of software development in detail.

Or

(b) Describe the technical perspective of architecture in detail.

18. (a) Discuss iteration workflows in detail.

Or

(b) Explain the types of work breakdown structures.

19. (a) Explain management indicators in detail.

Or

(b) Explain metrics automation in detail.

20. (a) Discuss software management principles in detail.

Or

(b) Discuss about culture shifts.

———————

(6 pages)

Reg. No. : .....

Code No. : 20261 E **Sub. Code : SECA 6 C**

B.C.A. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Sixth Semester

Computer Application

Major Elective — MOBILE COMMUNICATION

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which database stores permanent data about subscribers?

   (a) MSC (b) HLR

   (c) MSN (d) AUC

2. The most commonly used radio wave propagation is ————

(a) Line of sight (b) Groundwave

(c) Sky wave (d) All

3. DECT stands for

(a) Digital European Cordless Telephone

(b) Digital Enhanced Communication Technology

(c) Digital European Cellular Technology

(d) Duplex Enhanced Communication Technology

4. ———— is a light-weight portable wireless telephone that function as a cordless phone in home and as mobile phone elsewhere.

(a) Palmtop

(b) Laptop

(c) Personal handyphone

(d) All

5. GPS uses ———— satellites.

(a) Geosynchronous Earth Orbit Satellites

(b) Medium Earth Orbit satellites

(c) Low Earth Orbit Satellites

(d) High Earth Orbit Satellites

6. A Private Branch Exchange (PBX) is a telephone system owned and operated within a ————————

(a) Country (b) Continent

(c) Home (d) Enterprise

7. Which common protocol allows users to move from one network to another with the same IP address?

(a) IP (b) TCP

(c) TCP/IP (d) Mobile IP

8. Co-channel interference depends on cell ————————

(a) Radius (b) Distance

(c) Both (d) None

9. Which technology replace cables within a short range communication?

(a) Share IT (b) MANET

(c) Bluetooth (d) Wifi

10. AMPS means

(a) Advanced Mobile Phone System

(b) Adhoc Mobile Phone System

(c) Adhoc Mobile Public System

(d) Advanced Mobile Processing System

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) What is frequency reuse? Mention its use.

Or

(b) Explain cellular structure with a diagram.

12. (a) Explain IEEE 802.11 is detail.

Or

(b) Describe channel borrowing approaches in detail.

13. (a) Write short notes on cordless telephones.

Or

(b) List out the advantages and disadvantages of satellite communication.

14. (a) Explain fading in detail.

Or

(b) How will you measure signal to noise distortion ratio?

15. (a) Explain routing in ad-hoc networks.

Or

(b) Explain the protocols used in wireless network.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Explain the use of HLR and VLR in a mobile system.

Or

(b) Write down the properties of wireless networks.

17. (a) Describe roaming management in detail.

Or

(b) What is cell splitting? Explain its types with examples.

18. (a) Explain the working of wireless private box exchange.

Or

(b) Illustrate the application of CDPD architecture with a neat diagram.

19. (a) Explain the different types of interference in cellular mobile communication.

Or

(b) Explain the working of mobile IP in detail.

20. (a) Describe MANET in detail.

Or

(b) Write short notes on WDP and WTP.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20332 E **Sub. Code : AECA 52**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2022.

Fifth Semester

Computer Application

Major Elective — DESIGN AND ANALYSIS OF ALGORITHMS

(For those who joined in July 2020 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The complexity of the average case of an algorithm is ————

   (a) much more complicated to analyze

   (b) much more simpler to analyze than worst case that a worst case

   (c) sometimes more complicated and than that of worst case

   (d) none of the above

2. The time factor when determining the efficiency of algorithm is measured by ————————

(a) counting microseconds

(b) counting the number of statements

(c) counting the number of key operations

(d) counting the kilobytes of algorithm operation

3. Arranging records in some logical order is called ————————

(a) sorting (b) merging

(c) searching (d) listing

4. Quick sort is based on divide and conquer paradigm, we divide the problem on base of pivot element and ————————

(a) there is explicit combine process as well to conquer the solution

(b) no work is needed to combine the sub-arrays, the array is already sorted

(c) merging the sub arrays

(d) none of the above

5. The Prim's algorithm for finding the minimum spanning tree is based on ———— approach.

(a) Divide and conquer

(b) Dynamic programming

(c) Greedy

(d) Backtracing

6. In most of the cases, topological sort starts from a node which has ————

(a) Maximum degree (b) Minimum degree

(c) Any degree (d) Zero degree

7. Which of the following algorithm solves the all-pair shortest path problem?

(a) Prim's algorithm

(b) Dijkstra's algorithm

(c) Bellman-Ford's algorithm

(d) Floyd-Warshall's algorithm

8. Backtracking algorithm is implemented by constructing a tree of choices called as?

(a) state-space tree (b) state-chart

(c) node tree (d) backtracking tree

9. If a problem can be broken into subproblems which are reused several tomes, the problem processes ———— property.

(a) overlapping subproblems

(b) optimal substrcture

(c) Memoization

(d) Greedy

10. In dynamic programming, the technique of storing the previously calculated values is called ————

(a) Saving value property

(b) Storing value property

(c) Memoization

(d) Mapping

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) What is space complexity? Explain.

Or

(b) Discuss about complex analysis examples.

12. (a) Explain about quick sort with example.

Or

(b) Discuss about solving recurrence equations.

13. (a) Illustrate the topological sorting with example.

Or

(b) Elucidate about the container loading.

14. (a) Explain about backtracking in detail.

Or

(b) Discuss briefly about traveling salesperson.

15. (a) Explain about dynamic programming.

Or

(b) Describe about matrix multiplication chains.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Discuss about component of time complexity.

Or

(b) Illustrate about omega and theta notations.

17. (a) Explain about merge sort with example.

Or

(b) Discuss about the lower bound complexity.

18. (a) Analyze the Greedy method in detail.

Or

(b) Describe about single source shortest paths.

19. (a) Discuss about max clique in detail.

Or

(b) Summarize the board permutation with suitable example.

20. (a) Analyze about all pair shortest path with example.

Or

(b) Discuss about single source shortest path with negative costs.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20333 E **Sub. Code : AECA 54**

B.C.A. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Fifth Semester

Computer Application

Major Elective — MULTIMEDIA

(For those who joined in July 2020 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. RIFF stands for ————————

(a) Resource Information File Format

(b) Resource Interchange File Format

(c) Resource Interaction File Format

(d) Resource Internet File Format

2. ———— audit is responsible for the graphic element of the program.

(a) Computer graphic (b) Computer movie

(c) Computer audio (d) None of the above

3. In slide ———— view, you see the entire presentation displayed in miniature.

(a) arranger (b) shaper

(c) creator (d) sorter

4. ———— contains the specific colors available for reproducing the image.

(a) Color resolution (b) Color palette

(c) Color window (d) None of the above

5. The ———— master control the format and placement off the title and text you type of slides.

(a) copyright (b) slide

(c) design (d) layout

6. ———— are the best way to present facts and figures.

(a) Data (b) Diagram

(c) Charts (d) File

7. A ———— displays a list of commands and usually appears in the toolbar at the top of the screen.

(a) menu (b) view

(c) kit (d) list

8. AIFF stands for ————

(a) Audio Interface File Format

(b) Auto Internal File Format

(c) Audio Interval File Format

(d) Audio Interchange File Format

9. DXP is an extension of a ———— file.

(a) Drawing Exchange File

(b) Drawing Express File

(c) Drawing Exit File

(d) Drawing Entry File

10. ———— law is a federal law that does not vary state to state.

(a) Privacy (b) Copyrights

(c) Governed (d) None of the above

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Explain about communication information using multimedia.

Or

(b) Write a note on : target audience.

12. (a) Explain about interface design and psychology of learning.

Or

(b) Illustrate the use media to direct attention.

13. (a) Analyze about the character formats.

Or

(b) Elucidate about working with digital still photos.

14. (a) Explain about hardware consideration for digital viedo.

Or

(b) How to process sound using forge for windows? Discuss.

15. (a) Explain about selection of an authoring program.

Or

(b) Describe about the transition channel.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Illustrate about the structure of the application in program content.

Or

(b) Discuss about the important in multimedia development.

17. (a) Explain about planning the production of your applications.

Or

(b) Describe the following :

(i) Understanding and managing copyrights

(ii) Avoiding problem in planning a multimedia application.

18. (a) Analzye about the text formats.

Or

(b) Describe about using flowchart and designing organization charts.

19. (a) Discuss the following :

(i) MIDI

(ii) Optimizing video for playback from a CD-ROM.

Or

(b) Elucidate about choosing mono or stereo sound recording.

20. (a) Explain about functions of multimedia capable authoring software.

Or

(b) Discuss about the following :

(i) The cast window

(ii) The sprite window

(iii) Score frames.

———————