

MES Garware College of Commerce (Autonomous)
Karve Road, Pune

SYBBA-CA Semester - IV
Semester End Examination - April 2023

Subject : C++ Programming

Subject Code : B4-21/401

Duration : 2.30 Hrs.

Total Marks 60

Note : (1) All questions are compulsory.
(2) Figures to the right indicate full marks.

Q.1 Attempt any 10 MCQ. (10*1 = 10)

- (1) Wrapping data and its related functionality into a single entity is known as -----.
(a) Abstraction (b) Encapsulation (c) Polymorphism (d) Modularity
- (2) What does polymorphism in OOPs mean ?
(a) Concept of allowing overloading of functions
(b) Concept of hiding data
(c) Concept of keeping things in different modules/files
(d) Concept of wrapping things into a single unit
- (3) Which concept allows you to reuse the written code ?
(a) Encapsulation (b) Abstraction (c) Inheritance (d) Polymorphism
- (4) Which of the following is not a type of Constructor ?
(a) Friend constructor (b) Copy constructor
(c) Default constructor (d) Parameterized constructor
- (5) What is the role of a constructor in classes ?
(a) To modify the data whenever required
(b) To destroy an object
(c) To initialize the data members of an object when it is created
(d) To call private functions from the outer world
- (6) Name the function whose definition can be substituted at a place where its function call is made -----.
(a) friends function (b) inline function
(c) volatile function (d) external function
- (7) Which functions of a class are called inline functions ?
(a) All functions defined inside class or with the inline keyword
(b) All the functions accessing static members of the class
(c) All the functions that are defined outside the class
(d) none of these
- (8) The data members and functions of a class in C++ are by default -----.
(a) protected (b) private (c) public (d) public & protected
- (9) What is syntax of defining a destructor of class A ?
(a) A () {} (b) ~ A () {} (c) A :: A () {} (d) Non of the above

(2)

- (10) When destructors are called ?
(a) When a program ends (b) When a function ends
(c) When a delete operator is used (d) All of the mentioned
- (11) Where does keyword 'friend' should be placed ?
(a) function declaration (b) function definition
(c) main function (d) block function
- (12) We cannot make an instance of an abstract base class.
(a) TRUE (b) FALSE (c) Can be true and false (d) Can not say

Q.2 Attempt any four questions

(4*5 = 20)

- (a) Explain new and delete operators with example.
(b) What is function overloading? Explain with the help of suitable example.
(c) Explain different types of inheritance with diagram.
(d) Explain different uses of scope resolution operator in C++ with the help of suitable example.
(e) Write a C++ program to interchange values of two integer numbers. (Use call by reference)

Q.3 Attempt any Four questions.

(4*5 = 20)

- (a) What is friend function? Give any 4 characteristic.
(b) What is inline function? Explain it with example.
(c) Differentiate between procedure oriented programming and object oriented programming.
(d) What is pure virtual function? Explain with example.
(e) Write a C++ program to read array of 'n' integers from user and display it in reverse order. (Use Dynamic memory allocation)

Q.4 Attempt any One question.

(1*10 = 10)

- (a) Write a C++ program to find volume of cylinder, cone and sphere. (Use function overloading).
(b) Create a C++ class MyMatrix. Write a C++ program to accept and display a Matrix. Overload binary '-' operator to calculate subtraction of two matrices.

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MES GARWARE COLLEGE OF COMMERCE
(Autonomous)

Semester End Examination (April 2023)

SYBBA (CA) – Semester -IV

Object Oriented Software Engineering

DATE: 20/04/2023

Code: B4-21/402

Duration- 2.30 Hrs.

Total Marks: 60

Note:- All questions are Compulsory

Q1. Multiple choice questions

[10]

1. Grady Booch, James Rumbaugh and Ivar Jacobson combined the best features of their individual object oriented analysis into a new method for object oriented design known as _____.
a) HTML
b) XML
c) UML
d) SGML
2. A generalization relationship is rendered as a _____.
a) _____
b) ----->
c) ----->
d) ----->
3. Use case description consists of the following
a) Actors
b) Number and Use case name
c) Need and stakeholder
d) All of above
4. Which of these types of nodes are used in deployment diagram?
a) Device
b) Execution Environment
c) Artifact
d) Device and Execution Environment
5. SRS contains a _____ between a customer and developer
a) contract
b) understanding
c) meeting
d) negotiation
6. Booch methodology covers _____ and _____ phases of object oriented system
a) analysis ; design
b) design ; coding
c) analysis ; development
d) none of above
7. Structural diagrams are further classified as logical diagrams and _____ diagrams.
a) structural
b) physical
c) graphical
d) none of above
8. There are four kinds of relationships in UML i.e. Dependency, _____, Generalization, Realization
a) Union
b) intersection
c) Association
d) negotiation
9. The basic system elements are input , _____ and output.
a) processor
b) ALU
c) device
d) control
10. UML stands for _____
a) Unified modelling language
b) Unified middle language
c) Unified markup language
d) Universal modelling language

Q2. Answer the following (Any 3) [3 × 5 = 15]

[15]

- a) Describe the Jacobson method in detail.
- b) Draw a collaboration diagram for ATM system.
- c) What is a class diagram. Explain with example
- d) Explain UML architecture.
- e) What is meant by object orientation?.

Q3. Attempt the following (Any 3)[3 x 5 = 15]

[15]

- a) Draw the deployment diagram for railway reservation system.
- b) What is meant by Iterative development state it's various advantages.
- c) Define sequence diagram. Explain different kind of it's notations.
- d) What is association. Explain with example.
- e) Explain the different relationships with example.

Q4. Answer the following (Any 2) [2 × 5 = 10]

[10]

- a) List any two advantages and disadvantages of waterfall model..
- b) Define Tagged Values and stereotypes.
- c) Explain the terms forking and joining.

Q5. Attempt the following :

[10]

Construct a design element for point of the sale terminal management system that can be used for buying and selling of goods in the retail shop. When the customer arrives at the post check point with the items to purchase, the cashier records each item price and add the item information to the running sales transaction. The description and price of the current items are displayed. On completion of the item entry the cashier informs the sales totals and tax to the customer. The customer chooses payment type (cash, cheque, credit/debit) After the payment is made the system generates a receipt and automatically updates the inventory, the cashier handovers the receipt to the customer. Consider above situation draw the following UML diagram. i) Use case diagram. ii) Activity diagram.

MES Garware College of Commerce (Autonomous)
Karve Road, Pune

SYBBA-CA Semester - IV
Semester End Examination - April 2023

Subject : Python Programming

Subject Code : B4-21/403

Duration : 2.30 Hrs.

Total Marks 60

- Note : (1) All questions are compulsory.
(2) Figures to the right indicate full marks.

Q.1 Answer any Ten of the following multiple choice question by selecting (1*10 = 10) correct option

- (1) Who developed Python Programming Language ?
(a) Wick van Rossum (b) Rasmus Lerdorf
(c) Guido van Rossum (d) Niene Stom
- (2) Which type of Programming does Python Support ?
(a) object-oriented programming (b) structured programming
(c) functional programming (d) all of the mentioned
- (3) Which of the following character is used to give single-line comments in Python ?
(a) // (b) # (c) ! (d) /*
- (4) Which of the following functions is a built-in function in python ?
(a) factorial () (b) print () (c) seed () (d) sqrt ()
- (5) Which of the following is not a core data type in Python programming ?
(a) Tuples (b) Lists (c) Class (d) Dictionary
- (6) Which of these is the definition for packages in Python ?
(a) A set of main modules
(b) A folder of python modules
(c) A number of files containing Python definitions and statements
(d) A set of programs making use of Python modules
- (7) What arithmetic operators cannot be used with strings in Python ?
(a) * (b) - (c) + (d) All of the mentioned
- (8) Which of the following statements is used to create an empty set in Python ?
(a) () (b) [] (c) {} (d) set ()
- (9) Which of the following is not a type of inheritance ?
(a) Double-level (b) Multi-level (c) Single-level (d) Multiple
- (10) How many except statements can a try-except block have ?
(a) zero (b) one (c) more than one (d) more than zero
- (11) In Python context, what does GUI stand for ?
(a) General User Interface (b) Graphical Unit Interface
(c) Golfing Union of Ireland (d) Graphical User Interface



(2)

- (12) Which of the following are valid Tkinter widgets ?
- (a) Entry (b) button (c) Label (d) Color Picker

(5*4 = 20)

Q.2 Attempt any Four of the following.

- (a) Write down difference between List and Tuple.
(b) Explain any three widgets available in Tkinter in brief.
(c) Explain try, except and finally block.
(d) Write a Python program to check if a given key already exists in a dictionary.
If key exists replace with another key/value pair.
(e) Write Python script using package to calculate area and volume of cube and sphere.

(5*4 = 20)

Q.3 Attempt any Four of the following.

- (a) Write down difference between Set and Dictionary.
(b) Explain widget resizing with example.
(c) What is indentation ? Explain with example.
(d) Write a Python program to input a positive integer. Display correct message for correct and incorrect input. (Use Exception Handling)
(e) Write a Python script to create a class Rectangle with data members length, width and methods area, perimeter which can compute the area and perimeter of rectangle.

(5*2 = 10)

Q.4 Attempt any Two of the following.

- (a) Inheritance
(b) Features of python
(c) Datetime module

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SYBBA-CA Semester - IV
Semester End Examination - April 2023

Subject : Big Data

Subject Code : B4-21/404

Duration : 2.30 Hrs.

Total Marks 60

Note : (1) All questions are compulsory.
(2) Neat diagrams must be drawn
wherever necessary.

Q.1 Select correct option. (Attempt any 10)

(1*10 = 10)

- (1) Dependent variable is used to -----.
(a) Predict value in regression model
(b) Estimate value of independent variable
(c) Estimate relationship between dependent and single independent variable
(d) None
- (2) Support Vector Machines (SVMs) are well known ----- classification algorithm that separates different categories of data.
(a) Semi-supervised (b) Unsupervised
(c) Supervised (d) All of the above
- (3) Steps for statistical model building except -----.
(a) Model Fitting (b) Model Selection (c) Data Analysis (d) Model Validation
- (4) High entropy means that the partitions in classification are -----.
(a) pure (b) not pure (c) useful (d) useless
- (5) In correlation, both the variable's values are -----.
(a) Same (b) Random (c) Non Random (d) None of these
- (6) ----- infers from available data and tells what will happen in future.
(a) Statistical inference (b) Predictive Analytics
(c) Statistical Modeling (d) Prescriptive Analytics
- (7) Tools used in Data Analytics -----.
(a) R Programming (b) Python (c) SAS (d) All of the above
- (8) If the scatter diagram is drawn, the scatter point lie on a straight line then it indicates -----.
(a) Regression (b) Skewness (c) No correlation (d) Perfect Correlation
- (9) If we would like to produce learning rules that are easily interpreted by humans, which of the following machine learning task would we use ?
(a) Logistic regression (b) Nearest neighbour
(c) Decision tree learning (d) Support Vector Machine

- (10) Big data analytics does the following except.
 (a) Collects Data (b) Analyzes Data (c) Spreads Data (d) Organizes Data
- (11) Unsupervised learning uses ----- Data.
 (a) Labeled (b) Unlabeled (c) Semi-labeled (d) All above

Q.2 Answer the following questions. (Solve any Three)

(3*5 =

- (a) Explain statistical inference in detail.
 (b) How Naive Bays algorithm works ?
 (c) Write an R program to print the numbers from 1 to 100 and print "SY" for multiple of 3, print "BBA" for multiples of 5, and print "SYBBA" for multiples of both.
 (d) Write an R program to sort a Vector in ascending and descending order.
 (e) What is correlation ? Explain it's types.

(3*5 =

Q.3 Answer the following questions. (Solve any Three)

- (a) Explain KNN algorithm in detail.
 (b) Explain characteristics of big Data.
 (c) Write an R program to change the first level of a factor with another level of a given factor.
 (d) Write a script in R to create two vectors of different lengths and give these vectors as input to array and print addition and subtraction of those matrices.

(1*10 =

Q.4 Explain lifecycle of Data Analytics.

OR

Explain applications of big data in detail.

Q.5 Explain supervised learning and unsupervised learning in detail.

(1*10 =

OR

What is cluster analysis ? Explain it with it's types.

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