Max Time: 2½ hrs

FY-CS. DAA Sem-II 22/4/2022

Max Marks: 75

Instructions:

1) **All** questions are **compulsory**.
2) Mixing of sub questions is not allowed.
3) Write in clear, legible, writing.
4) For SECTION I (MCQs) only write the question no. and the correct option. Eg. 1 a, 2 c, etc.
5) Write five question no. and their correct options in one line of the answer sheet.

SECTION I

Answer the below given MCQs: (35)

1) .In Infix to postfix Conversion, when an operand is read, which of the following is done?
   a) It is placed on to the output b) It is placed in the operator stack
   c) It is ignored d) Operator stack is emptied
2) Recursion is a method in which the solution of a problem depends on _____
   a) Larger instances of different problems b) Larger instances of the same problem
   c) Smaller instances of the same problem d) Smaller instances of different problems
3) Recursion is similar to which of the following?
   a) Switch Case b) Loop
   c) If-else d) if elif else
4) What is the objective of the tower of hanoi puzzle?
   a) To move all disks to some other rod by following rules
   b) To divide the disks equally among the three rods by following rules
   c) To move all disks to some other rod in random order
   d) To divide the disks equally among three rods in random order
5) Is there any difference in the speed of execution between linear search(recursive) vs linear search(iterative)?
   a) Both execute at the same speed b) Linear search(recursive) is faster
   c) Linear search (Iterative) is faster d) Can't be said
6) How many passes do an insertion sort algorithm consist of?
   a) N b) N-1
   c) N+1 d) N^2
7) What is the worst case complexity of bubble sort?
   a) O(nlogn) b) O(logn)
   c) O(n) d) $O(n^2)$
8) In the following scenarios, when will you use selection sort?
   a) The input is already sorted b) A large file has to be sorted
   c) Large values need to be sorted with small keys
   d) Small values need to be sorted with large keys
9) What is the advantage of selection sort over other sorting techniques?
   a) It requires no additional storage space b) It is scalable
   c) It works best for inputs which are already sorted d) It is faster than any other sorting technique
10). Which of the following recursive formulas can be used to find the factorial of a number?
   a) fact(n) = n * fact(n) b) fact(n) = n * fact(n+1)
   c) fact(n) = n * fact(n-1) d) fact(n) = n * fact(1)
11)Where is linear searching used?
   a) When the list has only a few elements
   b) When performing a single search in an unordered list
   c) Used all the time

d) When the list has only a few elements and When performing a single search in an unordered list

12). Merge sort uses which of the following techniques to implement sorting?
a) backtracking
b) greedy algorithm
c) divide and conquer
d) dynamic programming.

13). What is the auxiliary space complexity of merge sort?
a) O(1)
b) O(log n)
c) O(n)
d) O(n log n)

14) What happens when the backtracking algorithm reaches a complete solution?
a) It backtracks to the root
b) It continues searching for other possible solutions
c) It traverses from a different route
d) Recursively traverses through the same route

15) .In how many directions do queens attack each other?
a) 1
b) 2
c) 3
d) 4

16) What is the output of the following code?

```
void my_recursive_function(int n)
{
  if(n == 0)
  return;
  printf("%d ",n);
  my_recursive_function(n-1);
}
int main()
{
  my_recursive_function(10);
  return 0;
}
```

a) 10
b) 1
c) 10 9 8 ... 1 0
d) 10 9 8 ... 1

17) Space complexity of recursive solution of tower of hanoi puzzle is _____
a) O(1)
b) O(n)
c) O(log n)
d) O(n log n)

18). What is the time complexity of an infix to postfix conversion algorithm?
a) O(N log N)
b) O(N)
c) $O(N^2)$
d) O(M log N)

19) What is the best case for linear search?
a) O(nlogn)
b) O(logn)
c) O(n)
d) O(1)

20) The given array is **arr = {1, 2, 4, 3}**. Bubble sort is used to sort the array elements. How many iterations will be done to sort the array?
a) 4
b) 2
c) 1
d) 0

21) What is the average case running time of an insertion sort algorithm?
a) O(N)
b) O(N log N)
c) O(log N)
d) O(N^2)

22) What is the disadvantage of selection sort?
a) It requires auxiliary memory
b) It is not scalable
c) It can be used for small keys
d) It takes linear time to sort the elements

23) What is the worst case time complexity of merge sort?

a) O(n log n) b) O(n^2)

c) O(n^2 log n) d) O(n log n^2)

24). Where is the n-queens problem implemented?

a) carom b) chess

c) ludo d) cards

25). Which of the following methods can be used to solve n-queen's problem?

a) greedy algorithm b) divide and conquer

c) iterative improvement d) backtracking

26) Parentheses are simply ignored in the conversion of infix to postfix expression.

a) True b) False

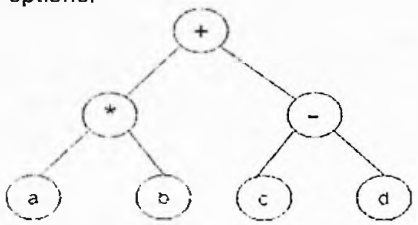
c) Never d) don't know

27). Which of the following is an infix expression?

a) (a+b)*(c+d) b) ab+c*

c) +ab d) abc+*

28). From the given Expression tree, identify the correct postfix expression from the list of options.



a) ab*cd*+

b) ab*cd-+

c) abcd-*+

d) ab*+cd-

29).What will be the number of passes to sort the elements using insertion sort?

14, 12,16, 6, 3, 10

a) 6 b) 5

c) 7 d) 1

30). What is an external sorting algorithm?

a) Algorithm that uses tape or disk during the sort

b) Algorithm that uses main memory during the sort

c) Algorithm that involves swapping

d) Algorithm that are considered 'in place'

31). The longest increasing subsequence problem is a problem to find the length of a subsequence from a sequence of array elements such that the subsequence is sorted in increasing order and its length is maximum. This problem can be solved using _____

a) Recursion b) Dynamic programming

c) Brute force d) Recursion, Dynamic programming, Brute force

32)..Placing n-queens so that no two queens attack each other is called?

a) n-queen's problem b) 8-queen's problem

c) Hamiltonian circuit problem d) subset sum problem

33). The following sequence is a fibonacci sequence:

0, 1, 1, 2, 3, 5, 8, 13, 21,.....

Which technique can be used to get the nth fibonacci term?

a) Recursion b) Dynamic programming

c) A single for loop d) Recursion, Dynamic Programming, For loops.

34). Which of the following is/are property/properties of a dynamic programming problem?

a) Optimal substructure b) Overlapping subproblems

c) Greedy approach d) Both optimal substructure and overlapping subproblems

35).Which of the following methods is used for sorting in merge sort?

a) merging b) partitioning

c) selection d) exchanging

SECTION II

Q1) Attempt any two: (10)

A) . What is data structure? explain types of data structures.

B) .What are the different types of operations we can perform on a stack data structure?

C) . What is complexity? Explain time and space complexity.

D) . Difference between the following: **(ATTEMPT ONLY TWO)**

i. Algorithm and Flowchart

ii. Algorithm and Pseudocode

iii. Pseudocode and Flowchart

Q2) Attempt any two: (10)

A) .What is recursion? Differentiate between recursion and iteration.

B) . Write a program of Fibonacci series using recursion and iteration.

C) .Explain sorting technique. Explain any 2 sorting approaches.

D) . Consider the following array A- [65,85,14,2,5,32,12,5,8,4,11]
and find out 32 from the above list through the **Binary Algorithm**.

Q3) Attempt any two: (10)

A) . Introduction of various types of algorithm design techniques.

B) . Explain dynamic programming along with its advantages, disadvantages and application.

C) . Briefly explain about divide and conquer approach.

D) . Briefly explain placing **6 queens** on a **6×6** chessboard such that no two queens attack each other.

Q4) Attempt any two: (10)

A) . What is the postfix expression for the corresponding infix expression ?.Solve using Stack. **a+b*c+(d*e)**

B) . Briefly explain selection technique. Explain the different algorithms which we use for finding the kth smallest element and the largest element in sorted and unsorted order.

C) .

D) .Short note on the following:

i. Partition Based Selection Algorithm

ii. Quick Select and Brute Force Method

Max Time: 2½ hrs GT Max Marks: 75

FY-CS = Sem-II OLD 22/4/2022

Instructions:

1) All questions are compulsory.
2) Mixing of sub questions are not allowed.
3) Write in clear, legible, writing.

SECTION I

Answer the below given MCQs: (35)

1) . _____ carries four processes registration, evaluation, authorization and restriction of certain chemicals to protect human health.
   a) . ROHS b). RAID c). REACH d). ROAD

2) . This directive is used to address the problem of electrical and electronic waste.
   a) . WEEE b). ROHS c). LEAD d). BREEM

3) . This directive restricts the use of six hazardous substances(Pb,Cd,Hg,PBB,PBDE,Cr6+) in manufacturing of electrical and electronic equipment.
   a) . BREEM b). WEEE c). ROHS d). LEAD

4) . _____ consist of carbon dioxide, methane, nitrous oxide, CFC gases etc.
   a) . PBDE b). GHG c). PBB d). NH3

5) . E-waste or electronic waste is also called as _____.
   a) . garbage b). technical dump c). techno trash d). waste

6) . The three Rs of the Green IT is
   a) . Reuse, Resale, Refurbish b). Refresh, Return, Recycle
   c) . Reuse, Refurbish, Recycle d). Reuse, Refurbish, Return

7) . ___ is an international standard for energy efficient consumer product.
   a) . Silver certificate b). Energy Star c). LEED d). Gold certificate

8) . ____ is promoting company's products deceptively in the aim of manufacturing environment friendly products.
   a) . Green production b). Green washing
   c) . Green development d). Green advertising

9) . It defines the degree to which CPU is sleeping.
   a) . C-state b). P-state c). V-state d). Z-state

10). It defines the frequency at which processor is running.
   a) . C-state b). P-state c). V-state d). Z-state

11). _____ gives better power benefits by using SIMD for instruction level data parallelism.
   a) . Multithreading b). Query Parallelism
   c) . Vectorization d). Multiprocessing

12). ___ is developing application software that adapt to changes in environment.
   a) . Source awareness b). Context awareness
   c). Eco friendly d). User friendly

13). ___ logs granular power measurement for hardware components.
a) . NetDAQ b). powercfg c). DAQ d). Netinfo

14). Windows 7 uses _____ utility for managing power options from command line.
a) . powercfg b). DAQ c). NetDAQ d). Netinfo

15). Energy Checker is developed by _____ Corporation.
a) . Intel b). Microsoft c). Sun d). Moon

16). Server ____ is also referred as server cluster
a) . Network b). Farm c). Cluster d). Grid

17). In _____ remote server network on internet store, manage and process data instead of PC or local server.
a) . remote logging b). soft computing c). virtualization d). cloud computing

18). In _____ data is stored on interconnected flash memory chips that retain the data even when there is no power present.
a) . SLC b). SATA c). PATA d). SSD

19). ____ is data storage technology that combines multiple disks into single logical unit in order to provide redundancy and fault tolerance to improve overall performance and to increase storage capacity.
a) . RAID b). RFID c). NAND d). AND

20). HSM is also known as _____ storage.
a) . disk b). multi c). tiered d). network

21). ___ provides a quantitative analysis of a product or service from its creation to disposal
a) . MSA b). LCA c). CIA d). ISI

22). It provides guidelines to build sustainable and peaceful society by taking into consideration the principles for environmental protection, human rights and global peace as independent.
a) . TBL b). Earth Charter c). PETA d). Energy Star

23). Enterprise green IT readiness is _____ that helps to implement green IT adaptation in an enterprise.
a) . program b). group c). Context awareness d). framework

24). ___ logic is product dependent.
a) . S-D b). G-D c). C-D d). D-D

25). Measures data center specific carbon emission.
a) . CUE b). PUE c). CUD d). CUP

26). Greenhouse effect relates to the slow increase of _____.
a) . Temperature b). Humidity c). Water level d). Pressure

27). P-state saves energy by following _____ equation.
a) . P = CVF b). P = CVF2 c). P = C2VF d). P = CV2F

28). LEED stands for Leadership in _____ and _____ Design.
a) . Energy and Electronic b). Energy and Environmental
c) . Equipment and Environmental d). Energy and Equipment

29). Which of the following are properties of a Sustainable Software?
a) . Long lifespan b). Short lifespan c). Medium lifespan
b) . Regular lifespan

30). _____ _ retains the state of a system while the internal devices and optical drives are powered off
a) . Shutdown b). Stand-by c). Hibernate d). Retain

31). _____ measures ability of system to work together on various platforms.
a) . Supportability b). Dependability c). Portability d). Efficiency

32). For Sustainable software, Performance is measured using _____
a) . Memory b). Throughput c). Processing d). Response Time

33). Sustainable Software should be _____ in its working
a) . Agile b). Intensive c). Lean d). Heavy

34). DAS stands for _____.
a) . Direct Area Storage b). Direct Access Storage
c) . Direct Attached Storage d). Direct Access Service

35). _____ metal is used in manufacturing of Batteries
a) . Cadmium b). Arsenic c). Mercury d). Chloride

SECTION II

Q1) Attempt any two: (10)

A) . What are E-waste disposal techniques?

B) . Discuss with the example how green IT acts as an opportunity to Computer world?

C) . What are environmental impacts of IT?

D) . What are three R's of Green IT? Explain in details

Q2) Attempt any two: (10)

A) . What are green grid xUE metrics?

B) . How caching helps in disk power management?

C) . What are the objectives of Green Network Protocol?

D) . What different form IT server takes in data center?

Q3) Attempt any two: (10)

A) . Write a note on metrics and measurement in green strategies.

B) . List and explain steps involved to integrate sustainability initiatives into IT and business.

C) . Explain the hierarchy of sustainability models.

D) . What is LCA of product and service? Explain the four stages of LCA.

Q4) Attempt any two: (10)

A) . Write a short note on Remanufacturing and reverse logistics.

B) . What are various stages in life cycle of a device?

C) . Describe organizational consideration in green IT strategy.

D) . What are green IT standards?

FY-BSc. CS Sem-II

Max Time: 2½ hrs

APP

Max Marks: 75

25/4/2022

Instructions:

1) All questions are compulsory.
2) Mixing of sub questions are not allowed.
3) Write in clear, legible, writing.

SECTION I

Answer the below given MCQs: (35)

1. _____ is used to create an object.
   a) class
   b) constructor
   c) User-defined functions
   d) In-built functions
2. What is Instantiation in terms of OOP terminology?
   a) Deleting an instance of class
   b) Modifying an instance of class
   c) Copying an instance of class
   d) Creating an instance of class
3. Which of the following statements is wrong about inheritance?
   a) Protected members of a class can be inherited
   b) The inheriting class is called a subclass
   c) Private members of a class can be inherited and accessed
   d) Inheritance is one of the features of OOP
4. Which of the following best describes inheritance?
   a) Ability of a class to derive members of another class as a part of its own definition
   b) Means of bundling instance variables and methods in order to restrict access to certain class members
   c) Focuses on variables and passing of variables to functions
   d) Allows for implementation of elegant software that is well designed and easily modified
5. What does built-in function type do in context of classes?
   a) Determines the object name of any value
   b) Determines the class name of any value
   c) Determines class description of any value
   d) Determines the file name of any value
6. Which of the following is not a type of inheritance?
   a) Double-level
   b) Multi-level
   c) Single-level
   d) Multiple
7. What does single-level inheritance mean?
   a) A subclass derives from a class which in turn derives from another class
   b) A single superclass inherits from multiple subclasses
   c) A single subclass derives from a single superclass
   d) Multiple base classes inherit a single derived class
8. Is Python code compiled or interpreted?
   a) Python code is both compiled and interpreted
   b) Python code is neither compiled nor interpreted
   c) Python code is only compiled
   d) Python code is only interpreted

9. To open a file c:\scores.txt for reading, we use _____

a) infile = open("c:\scores.txt", "r")
b) infile = open("c:\\scores.txt", "r")
c) infile = open(file = "c:\scores.txt", "r")
d) infile = open(file = "c:\\scores.txt", "r")

10. To read the remaining lines of the file from a file object infile, we use _____
a) infile.read(2)
b) infile.read()
c) infile.readline()
d) infile.readlines()

11. Which of the following mode will refer to binary data?
a) r
b) w
c) +
d) b

12. What is the correct syntax of open() function?
a) file = open(file_name [, access_mode][, buffering])
b) file object = open(file_name [, access_mode][, buffering])
c) file object = open(file_name)
d) none of the mentioned

13. How do you delete a file?
a) del(fp)
b) fp.delete()
c) os.remove('file')
d) os.delete('file')

14. What does the function re.match do?
a) matches a pattern at the start of the string
b) matches a pattern at any position in the string
c) such a function does not exist
d) none of the mentioned

15. Which of the following creates a pattern object?
a) re.create(str)
b) re.regex(str)
c) re.compile(str)
d) re.assemble(str)

16. How can you delete all of the rows where the "name" is "Ruby" in the Cats Table?
a) DELETE FROM Cats WHERE name = 'Ruby'
b) DELETE name='Ruby' FROM Cats
c) DELETE ROW name='Ruby' FROM Cats
d) DELETE FROM Cats WHERE name == 'Ruby'

17. When will the else part of try-except-else be executed?
a) always
b) when an exception occurs
c) when no exception occurs
d) when an exception occurs in to except block

18. Can one block of except statements handle multiple exception?
a) yes, like except TypeError, SyntaxError [,...]
b) yes, like except [TypeError, SyntaxError]
c) no
d) none of the mentioned

19. When is the finally block executed?
a) when there is no exception
b) when there is an exception
c) only if some condition that has been specified is satisfied
d) always

20. Which of the following is not an exception handling keyword in Python?
a) try
b) except
c) accept
d) finally

21. Essential thing to create a window screen using tkinter python?
a) call tk() function
b) create a button
c) To define a geometry
d) All of the above

22. fg in tkinter widget is stands for ?

a) foreground
b) background
c) forgap
d) None of the above

23. For user Entry data, which widget we use in tkinter ?
a) Entry
b) Text
c) Both of the above
d) None of the above

24. From which keyword we import the Tkinter in program?
a) call
b) from
c) import
d) All of the above

25. How pack() function works on tkinter widget ?
a) According to x,y coordinate
b) According to row and column vise
c) According to left,right,up,down
d) None of the above

26. How the grid() function put the widget on the screen ?
a) According to x,y coordinate
b) According to row and column vise
c) According to left,right,up,down
d) None of the above

27. What does the function re.search do?
a) matches a pattern at the start of the string
b) matches a pattern at any position in the string
c) such a function does not exist
d) none of the mentioned

28. Which of the following is correct syntax of the connect() function in sqlite3?
a) sqlite.connect
b) sqlite.connect.database
c) sqlite.connect(database)
d) non of these

29. connect () function in sqlite3 is used for?
a) To connect the database
b) To open the database
c) To create a database
d) All of the above

30. Correct way to import the sqlite3 in the program
a) import sqlite3 >
b) import sqlite3 as s
c) from sqlite3 import *
d) All of the above

31. SQLite is a ?
a) NoSQL database
b) Distributed database
c) Relational database
d) Operational database

32. How we can call the function of sqlite3, if we import by import sqlite3 as sq ?
a) sqlite.function()
b) function
c) sq.function
d) None of the above

33. For fetch the data, which function we use to run the select query ?
a) 1.fetch()
b) 2.rawquery()
c) 3.executequery
d) 4.execute()

34. How we import a tkinter in python program ?
a) import tkinter
b) import tkinter as t
c) from tkinter import *
d) All of the above

35. Tkinter tool in python provide the
a) Database
b) OS commands
c) GUI
d) All of the above

SECTION II

Q1) Attempt **any two**: (10)

A) Explain in detail python file functions for reading, writing, positioning, and seeking within file contents?

B) Explain different techniques for reading files such as Read and ReadLines.

C) What is regular expression? Explain with example

D) Explain difference between thread and process.

Q2) Attempt **any two**: (10)

A) What is Exception? Explain exception handling in python with example

B) With the help of proper example explain CheckButton widget in tkinter module.

C) Write a python program to show the demonstration of aggregate function in SQLite3.

D) Explain TCP, IP and UDP Protocols with respect to communication on Internet.

Q3) Attempt **any two**: (10)

A) What is the difference between Interface and abstract class?

B) Explain pillar of oops in python.

C) Explain Multiple Inheritance with example.

D) Explain method overriding with example in python.

Q4) Attempt **any two**: (10)

A) Explain how to create a directory, how to change a directory and how to remove a directory in python.

B) What is the use of Dropdown (Combo Box) Widget? Give an example to add 4 cities name in the list widget.

C) What is grid layout? Give suitable example.

D) What is TCL? How will u execute TCL statement in python SQLite?

F4 · Bse- CS Sem-II Reg. April-22

Int. To OOPs Using. C++

Max Time: 2½ hrs

Max Marks: 75

28/04/22

Instructions:

1) **All** questions are **compulsory**.
2) Mixing of sub questions are not allowed.
3) Write in clear, legible, writing.
4) Section I (MCQs) should be marked in the separate sheet.

SECTION I

Answer the below given MCQs: (35)

1) If 's' is a non-static variable referring to a class which has an integer variable 'x', then the correct way to access it is.
   a) x.
   b) s->x.
   c) s.x.
   d) s::x

2) Which of these is not a principle of OOP.
   a) Data encapsulation.
   b) Structure.
   c) Inheritance.
   d) Polymorphism.

3) Which one of these is not a keyword in C+.
   a) integer.
   b) switch.
   c) default.
   d) continue.

4) Which of these is a valid identifier in C++.
   a) _abc.
   b) 1_abc.
   c) abc@1.
   d) abc 1.

5) The size of the 'char' data type in C++ is.
   a) 1 byte.
   b) 2 byte.
   c) 3 byte.
   d) Dependent on the implementation.

6) Which of the following is not a primitive data type in C++?
   a) signed int.
   b) bool.
   c) string.
   d) unsigned long int.

7) The result of 8^10 in C++ is.
   a) true.
   b) false.
   c) 2.
   d) 4.

8) If x = 10, y = 12, then the z = (x>y) ? x : y will assign z the value.
   a) 10.
   b) 12.
   c) 0.
   d) 1.

9) In C++ "for (; ;) ;" will.
   a) give runtime error.
   b) give a compile time error.
   c) will print ";".
   d) none of the given options.

10) The correct way of declaring an array in C++ is.
   a) int[] a = {1,2};
   b) int[] a[] = {1,2};
   c) int a[] = {1,2};
   d) int a = {1,2};

11) A friend function.
   a) is allowed to access the private members of the class in which it is declared.
   b) is allowed to access the private members of a string class.
   c) is allowed to access the private members of a complex class.
   d) is allowed to access the private members of a date class.

12) Example of a parameterized constructor for a class 'Circle' is.
   a) ~Circle(){....}.
   b) Circle(){....}.
   c) circle(circle c){....}.
   d) Circle(Circle c){...}.

13) The destructor for a class 'Circle' is.
   a) ~Circle(){....}.
   b) Circle(){....}.
   c) circle(circle c){....}.
   d) Circle(Circle c){....}.

14) To get the length of a string contained in the string variable s use.
   a) s.len. b) s.size. c) s.len(). d) s.size().

15) cout in C++ is.
   a) a data type.
   b) a class.
   c) an operator.
   d) an object.

16) To allocate a memory to store an int value the correct way is C++ is.
   a) int * ptr = allocate int;.
   b) int * ptr = calloc int;.
   c) int * ptr = malloc int;.
   d) int * ptr = new int;.

17) sizeof in C++ is a.
   a) function.
   b) class object.
   c) operator.
   d) object.

18) The keyword used for creating a variable which can store true or false values is.
   a) boolean.
   b) bool.
   c) Boolean.
   d) Bool.

19) If int x = 1; int y = 2; then x>y will return.
   a) 1. b) 2. c) 0. d) false.

20) If int x=10; float b=4; double z = a/b; then the value of z is.
   a) 2.
   b) 2.5.
   c) 3.
   d) cannot be determined.

21) If int x = 5; ++x; now the value of x is.
   a) 4.
   b) 5.
   c) 6.
   d) cannot be determined.

22) Non static variables can be initialized.
   a) when defined in the class for the first time.
   b) in the static methods.
   c) in the constructors.
   d) None of the given options.

23) The destructor is called when.
   a) the program terminates.
   b) when the function terminates.

c) when the object goes out of scope.
d) when we shut down the computer.

24) If int a=7; int b=6; int z = a/b; then the value of z is.
a) 0.
b) 1.
c) 1.1.
d) None of the given options.

25) Which of these is a manipulator.
a) goto.
b) jump.
c) endl.
d) continue.

26) The operator used to allocate memory in C++ is.
a) allocate.
b) malloc.
c) calloc.
d) new.

27) The mode used for opening a file for appending is.
a) ios::app.
b) ios::a.
c) ios::append.
d) ios::add.

28) Which inheritance is not supported by C++.
a) Multilevel.
b) Multiple.
c) Hybrid.
d) None of the given options.

29) Which keyword cannot be used for a static variable.
a) private.
b) public.
c) this.
d) None of the given options.

30) Which of these operators cannot be overloaded in C++.
a) ++.
b) ( ).
c) : :.
d) ==.

31) Which of the following is not a data type in C++.
a) Int.
b) double.
c) float.
d) bool.

32) Which is the keyword used to create a class.
a) cls.
b) Class.
c) classe.
d) None of the given options.

33) If int i = 14; then the output of cout<<i++; is.
a) 14.
b) 15.
c) 13.
d) None of the given options.

34) The creator of C++ programming language is.
a) Denis Ritchie.
b) Bill Gate.
c) Bjarne Stroustrup.
d) Alan Turing.

35) If int x = 1; int y = 0; then the output of - while(y) {cout<<x;} - is.
a) 1.
b) 0.
c) 10.
d) None of the given options.

SECTION II

Q1) Attempt any two: (10)

A) Explain the benefits of Object Oriented Programming.
B) Explain bitwise operators with examples.
C) Explain switch-case structure with an example.
D) Write a note on arrays in C++.

Q2) Attempt any two: (10)

A) What is a constructor? How many types of constructors are there in C++? Give examples.
B) Explain the 'static' keyword with examples.
C) How do you overload a binary operator?
D) Explain aggregation and composition and its representation in an UML diagram with examples.

Q3) Attempt any two: (10)

A) Explain the various types of inheritance in C++.
B) What is the purpose of virtual function? Give an example.
C) Explain pointer in C++. How do you call a member function using a pointer?
D) State the various file modes in C++. Explain any two of them.

Q4) Attempt any two: (10)

A) Explain polymorphism in C++ with an example.
B) Write a program in C++ to create a class to represent a circle. Define appropriate constructor and member function to return the area of the circle. Write a driver program for it.
C) Write a program in C++ to create a class to represent a sphere. Define appropriate constructor and member function to return the volume of the sphere. Write a driver program for it.
D) Write a program in C++ to take a positive integer value from the user and prints its table from one to twenty.

FY B.Sc - CS - Sem-II Reg. April - 2022

27/04/22

Max Time: 2½ hrs **DBS** **Max Marks: 75**

Instructions

1) **All questions are compulsory**
2) **Mixing of sub questions are not allowed**
3) **Write in clear, legible, writing**

SECTION I

Answer the below given MCQs: (35)

1) Is a collection of related data items stored at one place?
   a) Database b) Disc c) File d) Folder

2) This changes made to database can be reverted back with the help of ____ command
   a) Commit b) Power c) Submit d) Rollback

3) The level is very close to physical storage of data
   a) External b) View c) Internal d) Inside

4) Is a step by step decomposition of complex records into simple records
   a) Simplification b) Normalization c) Decomposition d) Sorting

5) This statement is used to delete some or all records from existing table
   a) Delete b) Drop c) Remove d) Truncate

6) Various properties that describe an entity are known as
   a) Attributes b) Relation c) Tuples d) Record

7) This normal form used to minimize the transitive redundancy
   a) 1NF b) 2NF c) 3NF d) 5NF

8) This database backup is maintained at one recovery site as backup copies of that site
   a) Partial b) Full c) Some d) All

9) Symbol used to denote the selection operation in relational algebra is
   a) Sigma b) Delta c) Lambda d) Epsilon

10) Is a query within a query
   a) Super Query b) Running Query c) Half Query d) Sub Query

11) It is a series of small database operations that together forms a single large operation
   a) Transaction b) Command c) Sentence d) Program

12) If every row contains exactly one value for each attribute then the relation is in?
   a) 3NF b) BCNF c) 1NF d) 2NF

13) To create database schema we use
   a) OCL b) DDL c) DML d) TCL

14) We can select all columns from table by specifying column name
a) /(slash) b)-(dash) c)+(plus) d)*(star)

15) To delete table from database we use the command
a) Drop b) Truncate c) Delete d) Remove

16) This is a person responsible for the installation, configuration, up gradation, maintenance and monitoring databases in an organization
a) User b) Admin c) DBA d) Database

17) These users are users who interact with the system using application program that have been developed previously
a) Naïve User b) Application Programmer
c) Sophisticated User d) Specialized User

18) This will give you idea how your final system or software will look like after development is completed
a) Cardboard Model b) Data Model
c) Paper Model d) Dummy Model

19) Entity type which has its own key attributes by which we can identify specific entity uniquely is called as
a) Weak entity b) Derived entity c) Strong entity d) Double entity

20) The relationship type is number of participating entity types known as
a) Degree b) Weight c) Value d) Distance

21) The changes can be saved successfully with the help of this command
a) Commit b) Rollback c) Saved) Done

22) In the relational modes, cardinality is termed as:
a) Number of tuples b) Number of attributes
c) Number of tables d) Number of Constraints

23) The view of total database content is
a) Internal view b) External view c) Physical view d) Conceptual view

24) Architecture of the database can be viewed as
a) two levels b) four levels c) three levels d) one level

25) In a relational model, relation are termed as
a) Tuples b) Attributes c) Rows d) Tables

26) Related fields in a data base are grouped to form a
a) data file b) data record c) menu d) bank

27) In a Hierarchical model records are organized as
a) Graph b) List c) Links d) Tree

28) In an E-R diagram attributes are represented by
a) Rectangle b) square c) ellipse d) triangle

29) A relational database developer refers to a record as
a) a criteria b) a relation c) a tuple d) an attribute

30) Count function in SQL returns the number of
a) Values b) distinct values c) groups d) columns

31) The statement in SQL which allows to change the definition of a table is
a) Alter b) Update c) Create d) Select

32) E-R model uses this symbol to represent weak entity set?
a) Dotted rectangle b) Circle c) Diamond d) Doubly outlined rectangle

33) A table joined with itself is called
a) Join b) Self-join c) Outer Join d) Equi Join

34) which of the following is not an Aggregate function?
a) Min b) Max c) Select d) Avg

35) The attribute that can be divided into other attributes is called
a) Simple Attribute b) Composite Attribute
c) Multi-valued Attribute d) Derived Attribute

SECTION II

Q1) Attempt any two: (10)

A) What are the different types of database system users?
B) Explain hierarchical and network database model
C) List and explain different types of notation used in ER diagram
D) Construct an ER diagram for a hospital with a set of patients and a set of medical doctors, Associated with each patient, a log of the various tests and examinations conducted

Q2) Attempt any two: (10)

A) What is normalization? Explain 1NF and 2NF in detail
B) Differentiate between full functional dependency and partial functional dependency
C) Explain backup and recovery process in MySQL
D) What is mean by aggregate function explain its types?

Q3) Attempt any two: (10)

A) Explain various String functions available in MySQL
B) What is view? How it is created and stored?
C) Explain the concept of sub query in detail
D) What are joins? What are different types of JOINS explain with the help of example

Q4) Attempt any two: (10)

A) Write a short note on DBA
B) Explain security and authorization in SQL
C) Write a MySQL query to create and drop user with and without privileges.
D) Explain security and authorization in SQL.

Fy - CS Sem-II Reg. April - 2022

28/04/22

Calculus

F.Y.B.Sc. (Computer Science) April 2021-2022
Max Time: 2½ hrs. Max Marks: 75

Instructions:

1. **All** questions are **compulsory.**
2. Mixing of sub questions are not allowed.
3. Write in clear, legible, writing.
4. For SECTION I (MCQs) only write the question no. and the correct option. Eg. 1 a, 2 c, etc.
5. Write five question no. and their correct options in one line of the answer sheet

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SECTION I

Answer the below given MCQs:

1) If $f(x) = x + 2$ and $g(x) = x^2$ then, find $g * f(x)$
   a) $x^2 + 2$ b)$(x + 2)^2$ c)$x^4 + 4$ d)$2x + 2$
2) If a function f is One – One and onto then what is it called?
   a) Surjective b) Injective c) Objective d) Bijective
3) Evaluate the limit, $\lim_{x \to 2} \frac{1}{x-2}$
   a) 0 b) 1 c) ∞ d)2
4) If $f(x) = 4x^2 + 5$ then $f'(4)$=?
   a) 64 b) 69 c) 70 d) 60
5) A function f is differentiable at point a if, this condition holds at a.
   a) $D f(a^+) = D f(a^-)$ b) $D f(a^+) \neq D f(a^-)$
   c) $D f(a^+) < D f(a^-)$ d) $D f(a^+) > D f(a^-)$
6) Applications of derivative include....
   a) To determine where the function is increasing or decreasing.
   b) To locate the critical points
   c) To find the maximizing or minimizing values
   d) All of the above
7) A function $y = f(x)$ is said to be _____ function on an interval I, if $f(x_1) > f(x_2)$, whenever $x_1 < x_2$ in I
   a) Increasing b)Decreasing c)Constant d)Non- decreasing
8) Let $y = f(x)$ be differentiable function on (a,b), then f is increasing on (a,b) if .....
   a) $f'(x) < 0, \forall x \in (a,b)$ b) $f'(x) > 0, \forall x \in (a,b)$
   c) $f'(x) = 0, \forall x \in (a,b)$ d) none of the above
9) Let $y = f(x)$ be a function, defined on the interval I, which is twice differentiable then, graph of f is concave _____ on I, if $f''(x) < 0$,for all x in I.
   a) Downwards b)Upwards c)Leftwards d)Rightwards
10) If $f(x) = \cos x$ then, $f'(x) = ?$
   a) cos x b)sin x c) – sin x d) – cos x
11) Newton's method is used for .....
   a) Calculating approximate solution of the equation
   b) Finding the solution of Differential equation
   c) Numerical Integration
   d)Numerical Differentiation
12) Find the Continuous domain of the function $f(x) = \sqrt{9 - x^2}$,
   a) R b) (-3, 3) c) [-3, 3] d) (0,3)
13) Integration means finding .....
   a) Derivative b) Antiderivative c) Differentiative d) Maxima

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14) Choose the correct option

a) $\int u.v\,dx = u.\int v\,dx - \int \frac{du}{dx}(\int v\,dx)\,dx$

b) $\int u.v\,dx = u.\int v\,dx + \int \frac{du}{dx}(\int v\,dx)\,dx$

c) $\int u.v\,dx = u.\int v\,dx - \int u(\int v\,dx)\,dx$

d) $\int u.v\,dx = v\int u\,dx - \int \frac{du}{dx}(\int v\,dx)\,dx$

15) $\int_a^b f(x)\,dx =$ ..... $a < c < b$

a) $\int_a^c f(x)\,dx + \int_a^b f(x)\,dx$

b) $\int_a^c f(x)\,dx + \int_c^b f(x)\,dx$

c) $\int_a^b f(x)\,dx + \int_b^c f(x)\,dx$

d) $\int_a^b f(x)\,dx + \int_a^b f(x)\,dx$

16) $\int x^n\,dx = ?$

a) $\frac{x^n}{n} + c$ b) $\frac{x^{n+1}}{n} + c$ c)) $\frac{x^n}{n+1} + c$ d)) $\frac{x^{n+1}}{n+1} + c$

17) Application of Integration does not include.....

a) Finding the area between the curve

b) Finding the length of the curve

c) Solving Differential Equation

d) Finding Local extremum

18) If n is number of subdivisions of the given interval in the Simpson's 1/3 rule,then n must be _____

a) Odd b)Prime c)Even d)Composite

19) $\frac{d^2y}{dx^2}$ = f(x,y) is differential equation of degree ___ and order ___ .

a) 0, 1 b) 1, 0 c) 1, 1 d) 1, 2

20) To solve Linear Differential Equation we have to calculate.....

a) Integration b) Integrating Factor

c) Differentiation Factor d) Numerical Factor

21) Euler's method is used to find.....

a) Approximate solution of initial value problem

b) Approximate solution of polynomial

c) Integration

d) None of these

22) Newton's law of cooling states that.....

a) $\frac{d\theta}{dt} = k(\theta - A)$ with $\theta(t) = \theta_0$ b) $\frac{d\theta}{dt} = -k(\theta - A)$ with $\theta(t) = \theta_0$

c)) $\frac{d\theta}{dt} = k\theta$ with $\theta(t) = \theta_0$ d) $\frac{d\theta}{dt} = kA$ with $\theta(t) = \theta_0$

23) The differential equation $\frac{dy}{dx} = \frac{x-y}{x+y}$ can be solved by using which of the following way

a) separation variables b)substitution y = vx

b) Integrating Factor c)None of these

24) $\int_a^b f(x)dx$ =? If F'(x) = f(x)

a) F(a) – F(b) b) F(b) – F(a) c) f(a) – f(b) d) f(b) –f(a)

25) If $f(x,y) = x^3y + xy^3$ then f(2,1) = ?

a) 8 b)11 c)10 d) 9

26) Find the partial Derivative of $3x^2 + 2y^3$ with respect to x

a) 6x + 6y b) 6x c) 6y d) $6y^2$

27) What is f_{yy} if f(x) = sin x + cos y

a) -cos y b) sin x c) -sin x d) cos y

28)A function which can not be expressed in form of y =f(x) is called as

a) explicit function b)implicit function

c) algebraic function d) separable function

29) If f(x,y) is a function then gradient of f is given by.....

a) (f_{xx}, f_{yy}) b) (f_{xy}, f_{yx}) c) (f_x, f_y) d) (f_y, f_x)

30)A function f(x,y) can have extreme value at point at which

a) f_x and f_y both are zero b) f_x and f_y both do not exist

c) a) and b) d) a) or b)

31)If f(x,y) is a function such that $r < 0$ and $rt - s^2 < 0$, at a point then function has _____at that point

a) Local Maxima b)Local Minima c)Saddle Point d) Doubtful

32) If f is a scalar function, the directional derivative of f along v gives.....

a) Value of f along the direction v

b) Rate of change in f at u along the direction v

c) Rate of change in u at v along the direction f

d) None of these

33) Suppose that f is function from $B \to R$, where $B \in R^2$, and $(a,b) \in B$. Let D be the open disc with center (a,b). if $f(x,y) \leq f(a,b)\ \forall\ (x,y) \in D$ then f has Local _____ at (a,b)

a) maximum b) Minimum c) saddle point d) medium

34) $\lim_{h \to 0} \frac{fy(u+h,v) - fy(u,v)}{h}$ =.....

a) f_{xx} b)f_{xy} c)f_{yx} d)f_{yy}

35) The equation $f_x(x - x_0) + f_y(y - y_0) = 0$ gives the equation of _____ to the curve f (x,y) at point (x_0, y_0)

a) Tangent b)Normal c) Minimum d) Maximum

SECTION II

Q.1) Attempt any two. (10)

A) Discuss the continuity of the following function.

$f(x) = 3x^2 - 10 \quad x < 5$

$= 4x^2 + 3 \quad x \geq 5$

B) Find all the points on the graph $y = \frac{x}{\sqrt{1-x^2}}$ where the tangent line is either horizontal or vertical

C) Evaluate $\int 2x^2\sqrt{1-4x^3}\, dx$

D) Find all second order partial derivatives and also verify whether $f_{xy} = f_{yx}$ for,

$f(x,y) = x^4 + 7x^2y^3 - 5x^3y^3 + y^4$

Q.2) Attempt any two. (10)

A) Find Points of local maxima and minima for $f(x) = 2x^3 + x^2 - 20x + 4$

B) Find the length of the curve $y = x^2$ in interval [0,2]

C) Solve the following Differential Equation $x\frac{dy}{dx} = x^2 + 3y$

D) Find $\frac{dy}{dx}$ if, $f(x,y) = x^3 + y^3, x = t^2 - 1, \ y = 4t + 1$

Q.3) Attempt any two. (10)

A) Use Newton's method to determine an approximation to the solution $x^4 - x - 10 = 0$, in [1,2] take 4 approximation, upto 4 decimal limits.

B) Use Simpson's rule with $n = 6$ to estimate $\int_4^1 \sqrt{1+x^3}\ dx$

C) Explain Newton's law of cooling

D) Find the directional derivative of $f(x,y) = 3x + 4y$, at $u = (2.3)$, along $\bar{v} = 4\bar{i} + 5\bar{j}$

Q.4) Attempt any two. (10)

A) A metal wire of 72 cm long is bent to form a rectangle. Find dimension when it's area is maximum

B) Solve the Initial Value Problem $\frac{dy}{dx} = x + 2y$, with initial condition $x_0 = 0, y_0 = 0$

C) Solve the Differential equation $\sec^2 x \cdot \tan y\, dx + \sec^2 y \cdot \tan x\, dx = 0$

D) Find the equation of the tangent and normal to the circle $x^2 + y^2 = 25$ at a point (3,4)

FY-CS - Sem-II

Statistical Methods

29/4/2022

F.Y.B.Sc.(Computer Science)
Max Time: 2½ hrs

April 2021-2022
Max Marks: 75

Instructions:

1. **All** questions are **compulsory**.
2. Mixing of sub questions are not allowed.
3. Write in clear, legible, writing.
4. For SECTION I (MCQs) only write the question no. and the correct option. Eg. 1 a, 2 c, etc.
5. Write five question no. and their correct options in one line of the answer sheet.

SECTION I

Answer the below given MCQs:

1)"Coin is tossed three times" sample space of this random experiment has how many points
a) 6 b) 8 c) 10 d) 12

2) If a die is rolled, what is the probability of getting the number less than 4
a) $\frac{1}{6}$ b) $\frac{2}{3}$ c) $\frac{1}{4}$ d) $\frac{1}{3}$

3) If A and B are independent events then P (A∩B) = ?
a) P(A) – P(B) b) P(A) + P(B) c) P(A). P(B) d) P(A) / P(B)

4) If a restaurant has 9 vegetables on it's menu and you can order any 3 of them in a thali how many choices do you have, to order a thali?
a) 84 b) 120 c) 30 d) 110

5) If probability of occurrence of an event is 1 it is called as--------event
a) Impossible b) sure c) singleton d) independent

6) If a card is drawn from a pack of 52 cards what is the probability that it is a king, given that it is black?
a) $\frac{1}{26}$ b) $\frac{1}{13}$ c) $\frac{1}{52}$ d) $\frac{1}{16}$

7) If P(A) = 30, P(B) = 40 and P(A∩B) = 15, find P(AUB).
a) 65 b) 50 c) 45 d)55

8) $\frac{P(A \cap B)}{P(A)}$ = ……..
a) P(A/B) b) P(B/A) c)P(A) d) P(B)

9) Which of the following is a discrete variable?
a) Number of stars in the sky b) weight
c) Height d) temperature

10) .....is positive square root of variance.
a) Standard deviation b) mean c) Probability d) median

11) Parameters of Normal Distribution are
a) μ and σ b) n and p c) m and p d) p and σ

12) Area under the normal curve is ……..
a) 10 b) 2 c) 1 d) 0

13) V(c) = ? where c is a constant.
a) 0 b) 1 c) c d) 10

14) What is the variance of Binomial Distribution
a) np b) n/p c) npq d) qn

15) Which of the following is Standard Normal Distribution
a) N(1,0) b) N(2,1) c) N(1,2) d) N(0,1)

16) Which of the following test is used for large sample
a) t – test b) z – test c) F- test d) χ^2 - test

17) What is rejecting the null hypothesis when it is actually true is called as
a) Type I error b) Type II error c) Type III error d) none of these

18) 1 - P(Type II error) is called as.....
a) Probability b) confidence Interval c) level of significance d) power of the test

19) F distribution is _____ skewed.
a) negatively b) positively c) symmetrically d) middle

20) For t –distribution variance is always .....
a) greater than 1 b) less than 1 c) equal to 1 d) none of these

21) When H_1 is of ≠ type the test is ..... tailed test
a) one b) two c) three d) zero

22)When do we need non- parametric test?
a)When data is ordinal or nominal b) when data does not follow any distribution
c) when sample size is small d)all of the above

23)Which of the following test is used to check the differnce between medians of two groups
a) F - test b) t – test c) run test d)sign test

24)Run test id used to determine the..... in the given sequence.
a) continuoiusness b) randomness c) discreteness d)scatteredness

25)Which of the following test is non- parameric test?
a) Sign test b) z- test c) t – test d) F-test

26) Which of the following thing is true for Normal Distribution?
a)Mean ≠ median b) Median ≠ mode
c)Mean = Median ≠ mode d) mean = mode= median

27)Which test is used for asscociation of attributes?
a) Run test b) χ^2 test c) F-test d)sign test

28) ..... is a hypothesis testing technique used for testing the equality of two or more population means by ezxamining the variances.
a) F – test b) ANOVA test c) z – test d) run test

29) If X is a chi-square distribution with n degrees of freedom then what is variance of x
a) n – 1 b) 2n c) n d)n^2

30) Graph of the t distribution is.....
a) bell shaped b) strasight line c)scattered d) positively skewed

31) X is a variable with F-distribution with degrees of freedom n and n1 then what is inean of X
a) m b) $\frac{2m^2(n+m-2)}{n(m-2)^2(m-4)}$ c) $\frac{m}{-m-2}$ d) m + 2

32) Which of the following thing is true for F distribution?
a) $F_{n,m} = F_{m,n}$ b) $F_{n,m} \neq F_{m,n}$ c) $F_{n,m} = \frac{1}{Fm,n}$ d) $F_{n,m} > F_{m,n}$

33) Alternative Hypothesis is denoted by .....
a) H_0 b) H_1 c) H_2 d) H_3

34) To convert a normal distribution in standard normal distribution we have to perform which of the following operation.
a) $z = \frac{x-\mu}{\sigma}$ b) $z = \frac{x-\sigma}{\mu}$ c) $z = \frac{x-\mu}{\sigma^2}$ d) $z = \frac{x}{\sigma}$

35) What is the null hypothesis for F test?
a) Population variances are equal b) population means are equal
c)Population medians are equal d) population modes are equal

SECTION II

Q.1) Attempt any two. (10)

A) A ticket is drawn from a box containing 30 tickets and a number from 1 to 30 on it is observed. Obtain the probability that ticket drawn has a number.

i) Less than 6 ii) Greater than 20

iii) Multiple of 5 iv) Between 10 and 15 both inclusive

B) Calculate i) E(X) ii) V(X) and c.d.f. for the following probability distribution.

X	0	1	4	6
P(X)	1/4	3/16	5/16	1/4

C) In a metropolitan area the concentration of cadmium (Cd) in leaf lettuce was measured in 60 representative gardens where sewage sludge was used as fertilizer. It was found that the average content of Cd in the selected sample was 18 mg/kg, and s.d. 9 mg/kg.is there any evidence the mean concentration is higher than 12 at 1% l.o.s

D) Distinguish between parametric test and non- parametric test.

Q.2) Attempt any two. (10)

A) Explain in brief Bayes Theorem.

B) Vijay has started new retail out let in mid of the market. In market there is business and competition Therefore survival of a new outlet is very rare. Chance of survival is almost 5%. Vijay has started such 7 new retail outlet. Find out the probability that

1) At least 3 shops will survive. 2) Exactly 5 shops will survive.

C) The height of six randomly selected soldiers are in inches as, 63, 65, 68, 69, 71 and 72. Those of 10 randomly chosen sailors are 61, 62, 65, 66, 69, 69, 70, 71, 72, and 73. Is there evidence that soldiers are taller than sailors at 5% l.o.s?

D) Following is the data related to supporting a particular party and geographical area

	Supported	Not supported
Urban	50	30
Rural	90	100

Check is there any association between supporting a particular party and area at 5% l.o.s

Q.3) Attempt any two. (10)

A) A husband and a wife appear for two vacancies in the same post. The probability of husband's selection is 1/6 and that of wife's selection is 1/5. What is the probability that

i) Both will be selected

ii) Only one of them would be selected

iii) None of them is selected

B) The weight of adult goat are normally distributed with a mean $\mu = 25$ kg and a standard deviation, $\sigma = 3$kg. Select a goat randomly.

Find the probability that the goat's weight is less than 23 kg.

Find the probability that the weight is between 20 kg and 27 kg.

Find the probability that the weight is more than 29 kg.

C) A professor in the accounting department of business school claims that there is much more variability in final exam scores of students taking the introductory accounting course who are not majority in accounting. Random sample of 13 non accounting majors and 10 accounting majors are taken from the professor's class roster in his large lecture, and the following results are computed based on the final exam scores.

Non – Accounting $S^2 = 210.2$ Accounting $S^2 = 36.5$

Is there any evidence to support professor's claim. $\alpha = 5\%$

D) Suppose the state Government wants to examine the safely of compact cars. Medium cars and big Cars. It collects a sample of three for each of the car types. Using the hypothetical data provided below, test whether the mean pressure applied to the driver's head during a crash test is equal for each types of cars. Use l.o.s = 5%

Compact Cars	Middle Cars	Full Size Cars
643	469	484
655	427	456
702	525	402

Q.4.) Attempt any two. (10)

A) Amy has 2 bags. Bag 1 has 7 red and 2 blue balls and Bag 2 has 5 red and 9 blue balls. Amy draws a ball at random and it turns out to be red, determine the probability that the ball was drawn from bag 1.

B) Explain in brief Type I error and Type II error

C) A process is known to produce bricks whose weights are normally distributed with standard deviation 0.12 pounds. A random sample of 60 bricks from today's output had a mean weight of 4.07 pounds. Find a 99% confidence interval for the mean weight of all bricks produced today.

D) A study was conducted to know the effect of protein diet. Albumin is the most abundant protein in blood, and its concentration in the serum is measured in grams per deciliter (g/dL). The albumin levels of patients in three groups are shown below. Check whether there exist statistically significant difference in serum albumin levels among patient in three different diet.

5% Protein	10% protein	15% protein
3.1	3.8	4.0
2.6	4.1	5.5
2.9	2.9	5.0
	3.4	4.8
	4.2	

FY-CS Sem-II

Max Time: 2½ hrs

ECDM

Max Marks: 75

30/4/2022

Instructions:

1) All questions are compulsory.
2) Mixing of sub questions are not allowed.
3) Write in clear, legible, writing.

SECTION I

Answer the below given MCQs: (35)

1. The World Wide Web (WWW) was introduced in the year .....
   a) 1994
   b) 1996
   c) 1992
   d) 1990
2. _____ is an early form of E-commerce
   a) SCM
   b) EDI
   c) Both of these
   d) Neither of these
3. Which among the following products is suitable for E-Commerce?
   a) Books
   b) Vegetables
   c) Gold Jewellery
   d) None of these
4. Which of the following is not a party of SCM?
   a) Suppliers
   b) Manufacturers
   c) Distributors
   d) Customers
5. _____ is a function of E commerce.
   a) Marketing
   b) Supply Chain
   c) Finance
   d) All of the above
6. _____ mainly deals with buying and selling, especially on a large scale.
   a) Shopping
   b) Commerce
   c) Retailing
   d) Distribution
7. E-commerce has _____ scope than E-Business or Digital Business.
   a) Higher
   b) Narrower
   c) Wider
   d) More
8. _____are markets linked via modern communications networks and powered through high-speed computers.
   a) Marketplaces
   b) Metamarkets
   c) Electronic Network
   d) Electronic Markets
9. Companies like Flipkart, Amazon and Myntra belong to which type of Ecommerce (EC) segment.
   a) B2B
   b) B2C
   c) P2P
   d) C2B
10. Some marketers or companies charge other companies for letting them place a banner on their websites, blogs or platforms known as the _____E-Commerce Model.
    a) Affiliate
    b) Transaction
    c) Aggregator
    d) Advertising
11. The concept of online marketing and selling of products and services through the internet is _____
    a) B2G
    b) B2C
    c) B2B
    d) B2E
12. _____Allows transactions among customers and dealers through supplying complete information and ancillary services, without being concerned about the actual exchange of products and offerings among the parties.

a) Middlemen
b) Metamediary
c) Intermediary
d) All of the following

13. The dimension of e-commerce that enables commerce across national boundaries.
a) Interactivity
b) Global Reach
c) Richness
d) Equility

14. EDI standards are
a) not universally available
b) essential for B2B commerce
c) not required for B2B commerce
d) still being evolved

15. EDI requires
a) representation of common business documents in computer readable forms
b) data entry operators by receivers
c) special value added networks
d) special hardware at co-operating Business premises

16. Electronic Data Interchange Software consists of the following four layers
a) Business application, Internal format conversion, Network translator, EDI envelop
b) Business application, Internal format conversion, EDI translator, EDI envelop
c) Application layer, Transport layer, EDI translator, EDI envelop
d) Application layer, Transport layer, IP layer, EDI envelop

17. Which e-business model allows consumers to name their own price for products and services?
a) B2B
b) B2G
c) C2C
d) C2B

18. Which is the most valuable electronic commerce to the individual customer in long run?
a) Business to Customer
b) Business to Business
c) Customer to Customer
d) None of the above

19. The principal electronic payment systems for electronic commerce is"M-Commerce" refers to
a) A myth which does not exist in reality
b) The ability of business to reach potential customers wherever they are
c) The ability to have large capacity of memory storage dealing trade and commerce
d) None of the above

20. What is the process in which a buyer posts its interest in buying a certain quantity of items, and sellers compete for the business by submitting successively lower bids until there is only one seller left?
a) B2B marketplace
b) Intranet
c) Reverse auction
d) Internet

21. Which factor ensures your IT systems are functioning correctly and providing accurate information?
a) Availability
b) Accessibility
c) Reliability
d) Scalability

22. What sends work assignments through an e-mail system?
a) Database-based enterprise information portal
b) Messaging-based enterprise information portal
c) Database-based workflow system
d) Messaging-based workflow system

23. What is Social Media Marketing?
a) a way to communicate with customers on social media platforms to increase the performance of the business
b) Software
c) Hardware
d) All of the above

24. What social media marketing do?
    a) It can help to communicate with customers in a less time-consuming manner.
    b) It can help to create visual interaction between products and customers.
    c) It can help to advertise a product and services to many customers at once.
    d) All of the above
25. Social media marketing focuses on ___.
    a) Social platform
    b) Individual shop
    c) Whole sale
    d) All of the above
26. Identify the platform for Social media marketing?
    a) Instagram
    b) Twitter
    c) Facebook
    d) All of the above
27. What is meant by "micro-blogging"?
    a) post very short entries
    b) Blogs which are posted by companies, not individuals
    c) post very long entries
    d) Blogging from mobile devices
28. What is "social media optimization"?
    a) Creating content which easily creates publicity via social networks
    b) Writing clear content
    c) Creating short content which is easily indexed
    d) Hiring people to create content for social network
29. What is the benefit of Social media marketing?
    a) It can show your brand in front of people much more quickly and easily.
    b) increased traffic
    c) higher conversion rates
    d) All of the above
30. Which social network is considered the most popular for social media marketing?
    a) Facebook
    b) Twitter
    c) Instagram
    d) WhatsApp
31. Which is not direct benefit of social media marketing?
    a) Increased Brand Awareness
    b) More Inbound Traffic
    c) More Brand Authority
    d) Difficult To Measure
32. What is unique about social media marketing?
    a) Generates contacts quickly
    b) Interactive communication
    c) Better Customer Satisfaction
    d) All of the above
33. Which of the following is function of social media for business?
    a) Boost Brand Awareness
    b) Increase Inbound Traffic
    c) Enhance Brand Loyalty
    d) All of the above
34. How does a blog directly impact sales of a company?
    a) Turning visitors into leads
    b) Suggests latest products
    c) Topics that your target consumers find most valuable
    d) All of the above

SECTION II

Q1) Attempt **any two**: (10)

A. What is E-Commerce? List the advantages of E-Commerce.
B. What is B2B E-Commerce? Explain its advantages and disadvantages.
C. Explain EDI with its functions.
D. Explain the following terms:-
   I. E Learning Application
   II. Virtual Reality

Q2) Attempt **any two**: (10)

A. Write a note on E-Cheque.
B. Explain SEO with example.
C. Explain Traditional v/s Digital Marketing.
D. Write a note on "Digital Advertising Market in India."

Q3) Attempt **any two**: (10)

A. What is Social Media Marketing? Explain with example
B. What are the different types of Social Media Marketing?
C. Explain the importance of LinkedIn Marketing.
D. Write a note on Email Marketing.

Q4) Attempt **any two**: (10)

A. What are the Skills required in Digital Marketing.
B. Write a note on E-Cash.
C. Explain Google Analytics with example.
D. What is Content Marketing? Explain Challenges of Content Marketing.