[5865] - 101

First Year M.C.A. (Management)

IT11-JAVA PROGRAMMING

(2020 Pattern) (Semester - I)

Time : 2½ Hours]　　　　　　　　　　　　　　　　　　　*[Max. Marks : 50*

Instructions to the candidates:

　　1)　All Questions are compulsory.

　　2)　Figures to right indicate full marks.

Q1) Attempt the following multiple choice questions. Each questions carries half mark. **[10]**

　　i)　Java Source code is compiled into_____.

　　　　a)　Obj　　　　　　　　　　b)　Source Code

　　　　c)　Byte Code　　　　　　d)　Exe

　　ii)　Full Form of J2EE

　　　　a)　Java 2 Enterprise Edition

　　　　b)　Java 2 Express Edition

　　　　c)　Java 2 Expert Edition

　　　　d)　Java 2 Enterprise Environment

　　iii)　_____ is used to Find and Fix bugs in the java programs.

　　　　a)　JVM　　　　　　　　　b)　JRE

　　　　c)　JDK　　　　　　　　　d)　JDB

　　iv)　Which of these access specifiers can be used for a class so that its members can be accessed by a different class in the different package?

　　　　a)　Protected　　　　　　b)　Public

　　　　c)　Private　　　　　　　d)　No modifier

　　v)　Which of the following is the correct way of importing an entire package 'Pkg'?

　　　　a)　Import pkg　　　　　　b)　Import Pkg.

　　　　c)　Import Pkg.*　　　　　d)　Import Pkg.*.*

P.T.O.

vi) Which of the following is an incorrect statement about packages?

    a)   Package defines a namespace in which classes are stored.

    b)   A package can contain other package within it.

    c)   Java uses file system directories to store packages.

    d)   A package can be renamed without renaming the directory in which the classes are stored.

vii) Exception is a class/interface/abstract class/other.

    a)   calss   b)   interface

    c)   abstract class   d)   other

viii) In which of the following package Exception class exist?

    a)   Java.io   b)   Java . lang

    c)   Java. util   d)   Java. exception

ix) Which keyword is used to explicity throw an exception?

    a)   try   b)   catch

    c)   throw   d)   throws

x) Which of the following handles the exception when a catch is not used?

    a)   finally   b)   throw handler

    c)   default handler   d)   java runtime system

xi) Which of these keywords must be used to monitor for exceptions?

    a)   try   b)   catch

    c)   throw   d)   Finally

xii) What exception thrown by parse Int( ) method?

    a)   Null Pointer Exception

    b)   Arithmetic Exception

    c)   ClassNot Found Exception

    d)   Number format Exception

xiii) Which of these method of string class is used to obtain character at specified index?

    a)   char()   b)   Charat()

    c)   charat()   d)   charAt()

xiv) At time of array initialization which is necessary to specify?

    a)   Row   b)   Column

    c)   Row and Column   d)   None

xv) String class implements_____.

    a)   Serializable   b)   Comparable

    c)   Char Sequence   d)   All of the above

xvi) Intern() method of string class used for

    a)   Returns the canonical representation for the string object.

    b)   Removes whitespace from both ends of string

    c)   Returns a formatted string using the specified format string

    d)   Splits a string into an array of substrings.

xvii) Which is not a layout manager?

    a)   Flow Layout   b)   Border Layout

    c)   Card Layout   d)   Gridbox Layout

xviii) Which of these events generated when the size of an control is changed?

    a)   Component Event   b)   Container Event

    c)   Focus Event   d)   Size Event

xix) Which of the following are the components of the JDBC model.

    1)   Java application

    2)   JDBC Driver

    3)   Database

    a)   (1) and (2) only   b)   (2) and (3) only

    c)   (1) and (3) only   d)   All (1), (2) and (3)

xx) A Servlet maintain session in

    a)   Servlet container   b)   Servlet context

    c)   Servlet request   d)   Servlet response

Q2) a)   Your Collage is conducting a blood donation camp, so organiser wants to know how many students are interested in blood donation, therefore design a form to get details of the students like name, age, blood group, last donation data and whether they are ready to donate or not.

        Design user inteface using awt componants and handle respective events.

        [6]

    b)   Explain adapter class and give example.   **[4]**

<div align="center">OR</div>

    a)   Design a traffic signal using AWT componants handle events.   **[6]**

    b)   Explain list collection with example.   **[4]**

Q3) a) Your College is organizing cultural events, create a simple application using servlet to collect information like nam, class, gender in which activity he is interested to participate and store this data is database. **[8]**

b) Explain prepared statement. **[4]**

OR

a) Design UI to read roll number of students using AWT/SWING and display his/her all information like name, class marks, age and gender by fetching it from data base.

(use servlet and jdbc) **[8]**

b) Explain servlet life cycle. **[4]**

Q4) a) Differentiate arraylist and vector. **[5]**

b) Explain runtime polymorphism. **[3]**

OR

a) Explain Tree set with example. **[5]**

b) Explain super keyword. **[3]**

Q5) a) Explain different types of access control available in Java. **[4]**

b) Explain different types of constructor available in Thread class. **[3]**

c) Differentiate character stream and ByteStream. **[3]**

OR

a) Explain nested classes. **[4]**

b) Explain synchronized keyword. **[3]**

c) Explain scanner. **[3]**

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[Total No. of Pages : 4

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First Year M.C.A. (Management)
IT 12 : DATA STRUCTURE AND ALGORITHMS
(2020 Pattern) (Semester - I)

Time : 2½ Hours]   *[Max. Marks : 50*
Instructions to the candidates:
 1) *All questions are compulsory.*
 2) *From Q2 to Q5 having internal choices.*
 3) *Figure to right indicate full marks.*

Q1) Multiple choice questions.   **[20×½=10]**

    a) In a linked list, insertion can be done as_____.

        i) begining   ii) end

        iii) middle   iv) all

    b) Generally collection of nodes is called as_____.

        i) Queue   ii) Graph

        iii) Linked list   iv) Stack

    c) In a stack , if a user tries to insert an element in full stack, it is called_____.

        i) Overflow   ii) Underflow

        iii) Empty collection   iv) Garbage collection

    d) Which method is used for retrieving the top element of the stack without deleting it

        i) POP()   ii) Dequeue()

        iii) Push()   iv) Peek()

    e) Binary Tree is a special type of tree data structure in which every node can have a maximum_____children.

        i) 4   ii) 2

        iii) 1   iv) 0

    f) Which of the following satisfies the property of the Red Black tree.

        i) A tree which is a Binary search tree but not strictly Balanced tree

        ii) A node must be either Red or Black in color and root node must be black

        iii) A tree with maximum three children

        iv) A tree which is binary search tree but not strictly balanced tree and A node must be either Red or Black in color and root node must be black
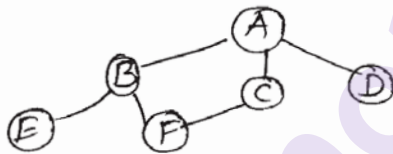
g) Time complexity of DFS is (V-number of vertex, E-number of edges).
   i) O (V+E)   ii) O (V)
   iii) O (E)   iv) None

h) For the adjocency matrix of a directed graph the row sum is_____degree and column sum is the _____degree.
   i) in, out   ii) out, in
   iii) in, total   iv) total, out

i) Heap can be used as_____.
   i) Priority queue   ii) Stack
   iii) A decreasing order array iv) Normal array

j) What is the best case for linear search?
   i) O(nlogn)   ii) O(logn)
   iii) O(n)   iv) O(1)

k) In linear search with array, how many comparisons are needed in best case.
   i) 0   ii) 1
   iii) n   iv) n/2

l) In what manner is a state space tree for a backtracking algorithm constructed?
   i) Depth-first search   ii) Breadth first search
   iii) Twice around the tree   iv) Hearest neighbour first

m) Back tracking algorithm is impemented by constructing a tree of choices called as
   i) State space tree   ii) State chart tree
   iii) Node tree   iv) Backtracking tree

n) What is the other name of dijkstra algorithm?
   i) Single source shortest path
   ii) Multiple source shortest path
   iii) Multiple destination
   iv) Single destination shortest path problem

o) The output of kruskal and prims algorithm is _____.
   i) Maximum spanning tree   ii) Spanning tree
   iii) Minimum spanning tree   iv) None

p) What is the worst case complexity of quicksort?
   i) O(nlogn)   ii) O(logn)
   iii) O(n)   iv) O(n²)

q) The optional data structure used to solve Tower of Hanoi is_____.
   i) Tree   ii) Heap
   iii) Queue   iv) Stack

r) In dynamic programming the output to stage n become the input to
  i) Stage n–1   ii) Stage n it self
  iii) Stage n+1   iv) Stage n–2

s) We use dynamic programming approach when
  i) We need on optimal solution
  ii) The solution has optional sub structure
  iii) The given problem can be reduced to 3 - SAT problem
  iv) It's faster than Greedy

t) The relationship between stages of a dynamic programming problem is called_____.
  i) State   ii) Random Variable
  iii) Node   iv) Transformation

Q2) a) Apply the algorithm to draw Binary search tree for the following data. 10, 08, 15, 12, 13, 07, 09, 17, 20, 18, 04, 05 **[5]**

b) Compare BFS and DFS. **[3]**

c) Explain Min Heap. **[2]**

<div align="center">OR</div>

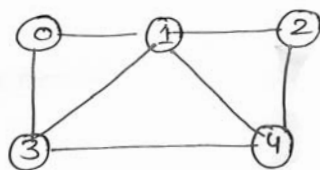a) Apply DFS algorithm on the following graph and show the steps. **[3]**

b) Construct Binary Tree for following data 10, 25, 2, 4, 7, 13, 11, 22 and determine inorder, postorder & preorder? **[5]**

c) Define Hash function 2 collision. **[2]**

Q3) a) Apply Rain Terrace algorithm to the following problem.
Input:- Height = [4, 2, 0, 3, 2, 5]. Draw the figure and find solution. **[4]**

b) Explain power set with example. **[3]**

c) Discuss use of priority queue. **[3]**

<div align="center">OR</div>

a) What is Hamiltonian cycle? **[3]**

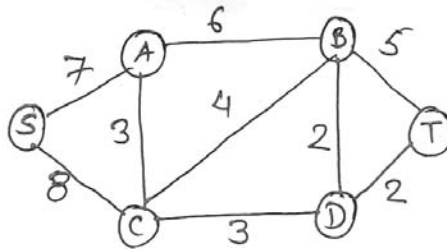b) Find the Hamiltonian cycle from following graph. **[4]**

c) Write an algorithm to count number of nodes in singly linked list. **[3]**

Q4) a) What is Jump Game algorithm? **[4]**

b) Sort the following data using merge sort algorithm [38, 27, 43, 3, 9, 82, 10]. **[4]**

c) Explain need of circular queue. **[2]**

<center>OR</center>

a) Illustrate the stages, in finding the minimum cost spanning tree for given graph using Prim's algorithm. **[4]**

b) Explain Rules for Tower of Hanoi with an suitable example. **[4]**

c) What is the purpose of linked list? **[2]**

Q5) a) Consider the instance of 0/1 knapsack problem n = 3, m = 20, p = (25, 24, 15), w = (18, 15, 10) using dynamic programming. Determine the optimal profit and the solution vector. **[7]**

b) Write an algorithm to reverse the nodes of a linked list. **[3]**

<center>OR</center>

a) Find the longest common subsequence for following string using dynamic programming. **[7]**

X = {A, B, C, D, B, A, C, D, F}

Y = {C, B, A, F}

b) Write an algorithm delete element from linked list whose sum is equal to zero. **[3]**

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First Year M.C.A. (Management)
IT13-OBJECT ORIENTED SOFTWARE ENGINEERING
(2020 Pattern) (Semester - I)

Time : 2½ Hours]   *[Max. Marks : 50*

Instructions to the candidates:
  1) *All questions are compulsory.*
  2) *For MCQ select appropriate choice from options.*
  3) *Draw neat diagrams wherever necessary.*
  4) *Figures to right indicate full marks.*

Q1) MCQ   **[10]**

  i) The_____ usually involves building a small version of the intended system prior to building the proposed system.

   a) Waterfall model   b) Spiral model

   c) Prototyping model   d) Incremental model

  ii) _____ model is best suited if requirements are easily understandable and defined.

   a) Waterfall model

   b) RAD model

   c) Spiral model

   d) None of the mentioned

  iii) Which phase of RUP is used to established business case for the system?

   a) Transition   b) Inception

   c) Construction   d) Elaboration

  iv) Which model is not suitable for accomodating any changes.

   a) Spiral   b) RAD

   c) Waterfall   d) Prototype

  v) Which of the following model follow a purely sequential approach?

   a) RAD   b) Spiral

   c) Prototype   d) Waterfall

vi) In software maintenance removing errors spotted by users is known as____.
    a) Corrective
    b) Adaptive
    c) Preventive
    d) Perfective

vii) The incremental model is _____.
    a) a reasonable approch when well-defined requirements
    b) good approch when a working case product quickly
    c) not used for commerecial projects
    d) approch to use projects with large development teams

viii) RAD model has _____ phases.
    a) 2   b) 3
    c) 5   d) 6

ix) Which one of the following is not a phase of prototyping?
    a) Quick design   b) Engineering
    c) Coding   d) Refinement

x) Which two models doesn't allow defining all requirements early in the cycle?
    a) Prototype & RAD   b) Sprial & Prototype
    c) Waterfall & RAD   d) Waterfall & Spiral

xi) The user system requirements are the part of ____
    a) SRS   b) Design document
    c) FOD   d) Feasibility Report

xii) Which of the following is a functional requirement?
    a) Maintainability
    b) Portability
    c) Robustness
    d) None of the mentioned

xiii) What characteristic of SRS is being depicted in "The product should have a good human interface".
    a) Consistent   b) Correct
    c) Non-verifiable   d) Ambiguous

xiv) Which of the following is/are included in SRS?
    a) External Interface   b) Performance
    c) Functionality   d) All of the mentioned

xv) Providing keyboard shortcuts mostly addresses ____.

    a) Efficiency   b) Learnability

    c) Attitude   d) Utility

xvi) Informative feedback should be ____.

    a) Relevant

    b) Meaningful

    c) Clear

    d) All of the mentioned

xvii) What is role of quality review?

    a) Find mistake and reduce work

    b) Risk Management

    c) Cost calculation

    d) None of the mentioned

xviii) Which is not an Agile methodology?

    a) Scrum   b) Extreme programming

    c) PMBOK3   d) Crystal

xix) Agilty refers to_____.

    a) Allotment   b) Analysis

    c) Activencess   d) Advancement

xx) In Agile model SDLC is carried out in the form of _____.

    a) Sprints   b) Documents

    c) Modules   d) Phases

Q2) Prepare SRS in IEEE format for the following system.   **[8]**

A 'Swami Sweets' has decided to automate billing system. Shop has several serving counters. Following functionalities will be considered.

• RFID card will be used for entering details of purchasing at respective counter.

• Bill is prepared at cash counter after reading RFID card entries.

• Bill amount is accepted using cash, card or gpay mode.

OR

Write SRS in IEEF format for event management system. The overall functioning is as follows.

- Booking of venue
- Assigning vendors
- Registration of vendors
- Generating quatations

Q3) Draw the <u>use case</u> and class diagram for a placement agency site which provides the facility for the condidate to register with their academic details, personal details & skill sets. Organizations can also register with their requirements. Searching faciltity is provided for searching job as well as condidate. **[20]**

OR

a) Draw state transition diagram for vending machine placed at super market. **[10]**

b) Draw Activity diagram for ordering grocery using mobile App. **[10]**

Q4) Attempt any <u>two.</u> **[8]**
   a) Explain extreme Programing (XP)
   b) What are 12 manifesto of Agile development?
   c) Write a difference between Agile and scrum.
   d) Write a short note on Feature Drive Development (FDD).

Q5) Design a user Interface for feedback of one day CET orientation program conducted by a reputed Institute. **[4]**

OR

Design UI for external examination form for SPPU. **[4]**

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[5865] - 104

M.C.A. (Management)
IT 14 : OPERATING SYSTEM CONCEPTS
(2020 Pattern) (Semester - I)

Time : 2½ Hours]   *[Max. Marks : 50*

Instructions to the candidates:
  1) *All Questions are compulsory.*
  2) *Draw neat diagrams wherever necessary.*

Q1) Attempt the following Multiple Choice Questions. Select one best option from the choices given.   **[20×½=10]**

  i)   CPU fetches the instruction from memory according to the value of ____.

    a)   Program status word   b)   Status register

    c)   Instruction register   d)   Program counter

  ii) Which one of the following is a synchronization tool?

    a)   Thread   b)   Pipe

    c)   Semaphore   d)   Socket

  iii) A single machine instruction can control the simultaneous execution of a number of processes on _____.

    a)   Lockstep Basis   b)   Openstep Basis

    c)   Early Basis   d)   Deadlock Basis

  iv) For real time operating systems, interupt latency should be _____.

    a)   Minimal   b)   Maximum

    c)   Zero   d)   Dependent on the schedule.

  v)   Which of the following is not an operating system?

    a)   Windows   b)   Linux

    c)   Oracle   d)   Dos

  vi) The shell script is _____.

    a)   File containing a series of commands

    b)   File containing special symbols

    c)   Group of commands

    d)   Group of Functions

P.T.O.

vii) Memory management technique in which system stores and retrieves data from secondary storage for use in main memory is called _____.

    a) Paying

    b) Fragmentation

    c) Mapping

    d) None of the mentioned

viii) Which of the following cannot be scheduled by the Kernel?

    a) Process   b) User-level thread

    c) Kernel-level thread   d) None of the mentioned

ix) Asymmetric multiprocessing systems of the computer system use _____.

    a) Master relationship

    b) Slave relationship

    c) Master Slave relationship

    d) Serial processing

x) Which one of the following is a real time operating system?

    a) RT Linux   b) VxWorks

    c) Windows CE   d) All of the above

xi) _____ is a windows utility program that locates and eliminates unnecessary fragments and rearranges files and unused disk space to optimize operations.

    a) Disk defragmenter   b) Restore

    c) Disk cleanup   d) Backup

xii) What will be the output of following command.

$echo "The process id is" $$$$

    a) The process id is $$

    b) The process id is <pid> <pid>

    c) The process id is $<pid> $<pid>

    d) The process id is $$$$

xiii) Which of the following algorithm minimizes the process flow time?

    a) First come First Served   b) Shortest Job First

    c) Earliest Deadline First   d) Longest Job First

xiv) Virtual memory in memory hierarchy consists of

    a) RAM and hard disk   b) Cache and hard disk

    c) Cache and RAM   d) All of the above

xv) Software can be removed and installed through.

    a)   Installer   b)   Control panel

    c)   Debugger   d)   Linker

xvi) After running this program, if you enter 1010, then what will be the output of the program?

```
#1/bin/bash
echo "please enter a number"
read a
if [$a −It 100]; then
echo "it is less than 100";
elif [$a −It 1000]; then
echo "it is less than 1000"
else
echo "it is greater than 1000"
fi
exit 0
```

    a)   It is greater than 1000

    b)   It is less than 1000

    c)   It is equal to 1000

    d)   None of the above

xvii) Which option is suitable when a process is executing in its critical section, then no other processes can be executing in their critical section.

    a)   asynchronous exclusion

    b)   synchronous exclusion

    c)   mutual exclusion

    d)   critical exclusion

xviii) In message passing a process receives information by executing the _____.

    a)   Send   b)   Send primitive

    c)   Receive   d)   Receive primitive

xix) In Linum OS _____ command is used to know which directory you are in

    a)   chkdir   b)   cd

    c)   pwd   d)   None of the above

xx) Which command is used to remove the files.

    a)   delete   b)   rm

    c)   dm   d)   erase

Q2) a)   What is operating system? Explain characteristics of OS.   **[6]**

      b)   Explain PCB in brief.   **[4]**

<div align="center">OR</div>

      a)   Explain logical and physical memory conversion.   **[6]**

      b)   Write a short note of synchronization.   **[4]**

Q3) a)   What is deadlock? Explain how deadlock can be avoided.   **[6]**

      b)   Describe types of multiprocessors.   **[4]**

<div align="center">OR</div>

      a)   Explain any two CPU scheduling algorithms   **[6]**

      b)   What is Mobile operating system? Explain types of Mobile OS.   **[4]**

Q4) a)   Describe components of RTOS.   **[6]**

      b)   Explain any 2 features of windows operating system control panel.   **[4]**

<div align="center">OR</div>

      a)   Explain applications of RTOS in detail.   **[6]**

      b)   Describe any 4 commands of Linux.   **[4]**

Q5) a)   Write a shell script for reverse order number.   **[6]**

      b)   Write a short note on Kernel.   **[4]**

<div align="center">OR</div>

      a)   Explain loops in Linux shell scripting with examples.   **[6]**

      b)   Write a shell script to print the contents of the following file.   **[4]**

          File name : 'myfile.txt'

          this is my text file

          Ubuntu is Linux operating system

          VI is the editor in Linux

          I know Linux operating system

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F.Y. M.C.A. (Management)
IT : 15 - NETWORK TECHNOLOGIES
(2020 Pattern) (Semester - I)

Time : 2½ Hours]   *[Max. Marks : 50*

Instructions to the candidates:

1) All questions are compulsory.
2) All questions carry equal marks.
3) Draw neat diagrams wherever necessary.

Q1) Write the correct option.   **[10]**

   a) _____is an example of connection oriented protocol.
      i) VDP   ii) IP
      iii) TCP   iv) SCTP

   b) Transmission data rate is decided by_____.
      i) Network layer   ii) Physical layer
      iii) Data link layer   iv) Transport layer

   c) Trailer is added at_____layer.
      i) Network   ii) Transport
      iii) Datalink   iv) Session

   d) In modulo-2 arithmetic, we use the _____operation for both addition and subtraction.
      i) X-OR   ii) OR
      iii) AND   iv) None of the mentioned

   e) We add 'r' redundant bits to each block to make the length 'n' = 'k'+ r. The resulting 'n' - bit blocks are called_____.
      i) Data words   ii) Block words
      iii) Code words   iv) None of the mentioned

   f) A simple parity-check code can detect_____errors.
      i) An even number of   ii) two
      iii) No-errors   iv) An odd number of

   g) In modulo-11 arithmetic we use only the integers in the range_____, inclusive.
      i) 1-10   ii) 1-11
      iii) 0-10   iv) None of the mentioned

   h) The Hamming distance between equal code words is_____.
      i) 1   ii) 'n'
      iii) 0   iv) None of the mentioned

P.T.O.

i) Which of the following IP address class 15 multicast.

    i) Class-A   ii) Class-B

    iii) Class-C   iv) Class-D

j) Which of the following is not applicable for IP.

    i) Error reporting   ii) Handle addressing conventions

    iii) Datagram format   iv) Packet handling conventions

k) Which of the following protocol uses both TCP and UDP.

    i) FTP   ii) SMTP

    iii) Telnet   iv) DNS

l) The_____Internet addresses are 32 bits in length.

    i) IPv_1 ii) IPv_2

    iii) IPv_3 iv) IPv_4

m) The IPV_4 addresses are represented using_____.

    i) Binary and dotted decimal notation

    ii) Binary notation

    iii) Dotted decimal notation

    iv) Hexa decimal notation

n) DNS database contains_____.

    i) Name server records   ii) Hostname-to-address records

    iii) Host name aliases   iv) All of the mentioned

o) Which of the following protocol is used to retrieve the emails.

    i) SMTP   ii) POP_3

    iii) SNMP   iv) FTP

p) FTP uses_____Paralled TCP connections to transfer a file.

    i) 1   ii) 2

    iii) 3   iv) 4

q) Original Message before transmission is called as_____.

    i) Cipher text   ii) Plain text

    iii) Secret-text   iv) None of the mentioned

r) Which method is used to establish a connection between server and client.

    i) accept ()   ii) open ()

    iii) getLocalHost   iv) OpenConnection ()

s) How do you implement reliable transmission in UDP protocol?

    i) by sequencing packages   ii) By using middleware

    iii) (i) & (ii) both   iv) None of the mentioned

t) How to get list of IP address that are assigned to a network interface?

    i) getInetAddresses   ii) get InterfaceAddresses

    iii) (i) & (ii) both   iv) None of the mentioned

Q2) a) The received Hamming code is 11001010101 with even parity. Find the error in the received code. **[5]**

b) Generate CRC code for data word 1010001011 using the divisor 11101. **[5]**

OR

a) Encode a binary word 11001 into the even parity hamming code. Given, number of data bets. $n = 5$. **[5]**

b) The received code word is 1100100101011, check if there is error in the code word if the divisor is 10101. **[5]**

Q3) a) For given class B IP address 172. 168. 14. 1 and subnet mask 253. 255. 140. 124 calculate **[5]**
   i) Total number of subnet.
   ii) Total no. of host IPs/subnet.
   iii) First and last valid IP for each subnet.

b) Explain IPV$_6$ address schemes in details. **[5]**

OR

a) What is the default mask for following IP host addresses (solve with proper procedure). **[5]**
   i) 98. 0. 46. 200
   ii) 205. 35-66. 14
   iii) 172. 14. 16. 08

b) Compare IPv$_4$ and IPv$_6$. **[5]**

Q4) a) What is HTTP? Explain HTTP transaction in detail. **[5]**

b) What is email? Explain different email protocols. **[5]**

OR

a) Explain RIP in detail. **[5]**

b) What is DHCP? Explain DHCP scope resolution protocol in detail. **[5]**

Q5) a) Define threat and attacks. Explain active attack. **[4]**

b) Write a simple socket program to find out IP address of host. **[6]**

OR

a) Write a PCP Server-Socket program which accept request from client to capitalize string and sending the response in the form of capitalized sentence block to client. **[6]**

b) Describe TCP/IP protocol surf in detail. **[4]**

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[5865] - 201

F.Y.M.C.A. (Management)
IT21-PYTHON PROGRAMMING
(2020 Pattern) (Semester - II)

Time : 2½ Hours]   *[Max. Marks : 50*

Instructions to the candidates:

1) *All Questions are compulsory.*
2) *Figures to the right indicate full marks.*
3) *Answer all subquestions at one place.*

Q1) Choose the correct option. (½ mark each)   **[10]**

    i)   Which type of programming does python support?

        a)   Object-oriented programming

        b)   Structured programming

        c)   Functional programming

        d)   all of the mentioned

    ii)   Which keyword is used for function in python language?

        a)   function   b)   def

        c)   fun   d)   define

    iii)   Which of the following function is used to export graph generated in matplotlib to-png file format?

        a)   savefig   b)   savefigure

        c)   save   d)   export

    iv)   Which of the following method used for displaying plot?

        a)   display   b)   show

        c)   execute   d)   plot

    v)   In python, a class is _____ for a concrete object.

        a)   a distraction   b)   an instance

        c)   a nuisance   d)   a blue print

P.T.O.

vi) You can delete properties of objects by using the _____ keyword.

    a) delete   b) dedl

    c) del   d) drop

vii) The class has a documentation string, which can be accessed via?

    a) ClassName

    b) ClassName___ doc___

    c) _doc_

    d) ClassName. – doc —

viii) Which of the following function can be used to check if a file 'Sample,txt' exists?

    a) OS. Path. is Exits ('sample.txt')

    b) OS. Path. exists ('sample.txt')

    c) OS.Path. is file ('sample.txt')

    d) OS. is File ('sample.txt')

ix) Which of following is NOT a correct was of importing math module?

    a) amport * from math   b) From math import*

    c) Import math as mt   d) From math import pi,sin

x) Which of following functions clears the regular expression cache?

    a) re. sub ( )   b) re. pos( )

    c) re.purge ( )   d) re.Subn ( )

xi) Command to keep thread in sleep mode?

    a) Thread.sleep   b) Thread_sleep

    c) Threadsleep   d) Thread - sleep

xii) Which of the following is not an exception hardling keyword is python?

    a) try   b) except

    c) accept   d) finally

xiii) W.r.t MongoDB, which of the following commands will delete a collection named EMP?

    a) db.emp. drop ( )   b) db.emp.delete ( )

    c) db. emp. deletemany ( ) d) db. emp. deleteall ( )

xiv) Chose the correct syntax of reshape ( ) function is Numpy array____.

    a) array. reshape (shape) b) reshape (Shape, array)

    c) reshape (array, shape) d) reshape (shape)

xv) If zoo = ['lion', 'tiger'], what will be zoo×2?

   a) ['lion', 'lion,' 'tiger,' 'tiger']

   b) ['lion']

   c) ['tiger']

   d) ['lion,' 'tiger', 'lion,' 'tiger']

xvi) What is correct syntax for creating single valued tuple?

   a) (a)   b) (,)

   c) (a,)   d) {a}

xvii) _____ is a string literal denotated by triple quote for providing the specifications of certain program elements.

   a) client   b) docstrng

   c) modularity   d) interface

xviii) The command that is used to install a third-party module in python is

   a) pip   b) import

   c) py   d) install

xix) The character_____ and ____matches the start and end of strng, respectively.

   a) $ and $ b) * and &

   c) ^ and •   d) ^ and $

xx) The most important object defined in Numpy is an N-dimensional array type called?

   a) narry   b) Ndarry

   c) ndrray   d) NdArray ( )

Q2) a) Write a program to check the number entered by user is even or odd. Program should accept integer digits only.   **[3]**

   b) Illustrate types of arguments used in python function with example. **[3]**

   c) Discuss the polymorphism concept in python create suitable python classes.   **[4]**

OR

a) Write a python program for the following. **[3]**
   i) Create list of fruits
   ii) Add new fruit in list.
   iii) sort the list.
   iv) delete last fruit name from list.

b) Write a python function to check the given number is even or odd. Handle suitable exceptions. **[3]**

c) Explain constructor concept in python with example. **[4]**

Q3) a) Write a python program to create an employee. txt file and store employee name and address. **[2]**

b) Write a python program to create "employee" collection with fields" (ID, name, address, phone email and dept) in mongoDB. Prform the following operations. **[5]**
   i) Display all employees in "Accounts" department
   ii) Delete employee with ID - 210345
   iii) Update phone with new phone for employee ID -123

c) What is tuple?
   What is the difference between list and tuple? **[3]**

OR

a) What is set? Explain with example. **[3]**

b) Write a program to retrieve and display employee details from "Employee" collection stored in mangoDB database. **[3]**

c) Write a program to update the employee details stored in "Employee" collection stored in Mangodb database. **[2]**

d) Write python program to read "employee" . txt" file and display alternate employee record. **[2]**

Q4) a) Write a program for extracting email address from a given webpage. **[4]**

b) What is synchronization in threading? Explain with example. **[4]**

c) What is module? Explain with example. **[2]**

OR

a) Write a program to validate URL using regular expression. Explain every special character of the regular expression used in this program. **[4]**

b) Write a multithreading program, where one thread prints square of a number and another thread prints factorial of a number. Also display the total time taken for the execution. **[4]**

c) What is anonymous function in python? Demonstrate with example. **[2]**

Q5) a) Create 5×5 2D numpy assay and retrieve top left corner 2×2 array from it. **[2]**

b) Write a program to illustrate slicing in numpy array. **[2]**

c) Create paundas dataframe using two dimensional list. Perform following operations. **[4]**

    i) Count number of rows.

    ii) Count missing values in first column.

    iii) Display number of columns in data frame.

d) Explain the terms w.r.t. oops in python. **[2]**

    i) -- lnit--   ii) Self

OR

a) Create 3×3 numpy array and display column wise mean and median. **[2]**

b) Create a series from numpy array and find max and mean of unique items of series. **[2]**

c) Given data frame as below: **[4]**

ID	Name	HRA	TA	DA
1001	Mohan	12000	6000	10000
1002	Sachin	13000	5000	9000
1003	Virat	11000	4000	8000

    i) Compute sum of each column.

    ii) Compute mean of each integer column.

    iii) Compute median of each integer column.

d) Explain overloading in python with example. **[2]**

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[5865] - 201

F.Y.M.C.A. (Management)
IT21-PYTHON PROGRAMMING
(2020 Pattern) (Semester - II)

Time : 2½ Hours]
Instructions to the candidates:
1) *All Questions are compulsory.*
2) *Figures to the right indicate full marks.*
3) *Answer all subquestions at one place.*

[Max. Marks : 50

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4

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  ii) Compute mean of each integer column.

  iii) Compute median of each integer column.

d) Explain overloading in python with example. **[2]**

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[5865]-202

F.Y.M.C.A. (Management)

IT 22 : SOFTWARE PROJECT MANAGEMENT

(2020 Pattern) (Semester - II)

Time : 2½ Hours]   *[Max. Marks : 50*

Instructions to the candidates:

    1)   All questions are compulsory.

    2)   Draw neat labeled diagrams wherever necessary.

Q1) Multiple choice questions (MCQ's).   **[20×½=10]**

   a) Which of the following option is used to measure the size of a user story for an agile project?

     i)   Story points   ii)   Function points

     iii) Velocity points   iv)   Work

   b) Which of the following is not an attribute of a project?

     i)   Projects are unique

     ii) Projects are developed

     iii) Projects have primary customer

     iv) Project refinements

   c) If a team can complete 10 story points in an iteration then how long will it take for the team to complete 100 story points?

     i)   10 waves   ii)   10 iterations

     iii) 20 waves   iv)   20 iterations

   d) Following is (are) the responsibility (ies) of the project manager.

     i)   Budgeting and cost control   ii)   Allocating resources

     iii) Tracking project expenditure iv)   All of the above

   e) What are the fixed-length of development iterations called in DSDM methodology?

     i)   Timeboxes   ii)   Sprints

     iii) Units   iv)   Versions

   f) Function count is developed by_____.

     i)   Bary Bohem   ii)   Alan Albrecht

     iii) Pressman   iv)   None of the above

P.T.O.

g) Which command creates an empty git repository in the specified directory?
   i) git init   ii) git vog
   iii) git reset   iv) none of the above

h) Which mode you select for the project size 450 KLOC?
   i) Organic   ii) Semi-detached
   iii) embeded   iv) None of them

i) Which of the following git command that download your repository from github to your computer?
   i) git fork   ii) git commit
   iii) git close   iv) git push

j) COCOMO predicts_____.
   i) Effort   ii) Effort & schedule
   iii) Cost & effort   iv) Cost & schedule

k) The working culture of an Agive team is_____.
   i) Collective   ii) Collaborative
   iii) Connective   iv) Contemplative

l) _____enables team to learn from the mistakes dose in the previous iteration.
   i) Pair grooming
   ii) Estimation during release planning
   iii) Estimation during iteration planning
   iv) Retrospective

m) You can define agile team as "scrum team" and "technical team"_____.
   i) True   ii) False
   iii) Can not determine   iv) None of the above

n) Tracking project issues in an agile project is the primary responsibility of the_____.
   i) Tester   ii) Project reader
   iii) Functional manager   iv) Developer

o) What is the main purpose of imposing limits on work in project?
   i) To optimize throughput   ii) To minimize resource allocation
   iii) To visualize lead time   iv) To balance workflow

p) Select the option that suits the manifesto for agive software development.
   i) Working software
   ii) Individual and Integration
   iii) Customer collaboration
   iv) All of the above mentioned

q) Delphi method is used for_____.
   i) Judgemental forecast
   ii) Time series forecast
   iii) Associative model
   iv) All are the correct

r) Git is a_____.
   i) Localised version control system
   ii) Distributed version control system
   iii) Centralized version control system
   iv) None of the above

s) In scrum, when is sprint over?
   i) When all the sprint backlog items are completed
   ii) When the product owner suggests
   iii) When the time box expires
   iv) When the final testing is completes

t) Which of the following is not the level of CMM?
   i) Defined
   ii) Analysis
   iii) Managed
   iv) Optimizing

Q2) a) A large construction company engaged in real estate construction business decided to develop ERP through Astha softech. The output of system will be cost sheets detailing the relevant information for contracting, budgeting, progress monitoring and bill payment. Astha softech team has no domain knowledge. As a project manager, you have been asked to suggest risk management strategy after identifying the risk. **[6]**

b) Explain the benefits of Agile project management in brief. **[4]**

OR

b) Explain sprint retrospective in detail.

Q3) a) A project of 200 KLOC is to be developed. Software development team has average experience on similar type of projects. The project schedule is not very right. Calculate the effort, development time, average staff size of the project by using semi-detached mode of cocomo model. **[6]**

b) Differentiate : Agile project management v/s Traditional project management. **[4]**

OR

b) Explain Agile project management life cycle.

Q4) a)   Demonstrate value-driven development with suitable example.   **[6]**

                                    OR

   Explain the roles of scrum master, product owner and development team.

b)   Write short note (any one).   **[4]**
     i)   Agile tools.
     ii) GitHub.

Q5) a)   Explain release planning and iteration (Sprint) planning in brief.   **[6]**

                                    OR

   Explain the process to plan and execute iteration in agile with suitable example.

b)   Write short note (any one).   **[4]**
     i)   Role of project manager.
     ii) Software configuration management.

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[5865] - 203

F.Y.M.C.A - (Management Faculty)
IT - 23 : ADVANCED INTERNET TECHNOLOGIES
(2020 Pattern) (Semester - II)

Time : 2½ Hours]   *[Max. Marks : 50*

Instructions to the candidates:
  1)   *All questions are compulsory.*
  2)   *Draw neat & labeled diagrams wherever necessary.*

Q1) Choose the correct option (½ mark each).   **[10]**

  1)   An article element contains _____.

    a)   Audio   b)   Image

    c)   Text or embedded content   d)   None of the above

  2)   What is the correct syntax of doctype in html 5?

    a)   <: /doctype html>   b)   <: doctype html>

    c)   <:!doctype html>   d)   <:!DOCTYPE html>

  3)   ____ selector applies styles to elements that must be addressed before submission.

    a)   : must   b)   : required

    c)   : must-be   d)   : addressed

  4)   Which of the following CSS property is used to set the background image of an element?

    a)   background - attachment   b)   background - image

    c)   background - color   d)   none of the above

  5)   Choose the module which is used to serve static resources in Node.js?

    a)   http   b)   node - static

    c)   node - resource   d)   static

  6)   Which of the following command is used to install the Node.js express module?

    a) $npm install express   b) $node install express

    c) $install express   d) $npmnode install express

P.T.O.

7) Node. js is written in _____.
   a) C, C++, Javascript   b) C, Python, Javascript
   c) C, C++, Java   d) C, C++, PHP

8) The Node. js modules can be exposed using:
   a) expose   b) module
   c) exports   d) all of the above

9) Which method of fs module is used to open a file?
   a) fs. open (path, flags [,mode], call back)
   b) fs. openFile (path, flags [,mode], call back)
   c) fs. openPath (path, flags [,mode], call back)
   d) none of the above

10) Which of the following is the correct syntax for writing AngularJS expressions?
   a) (expression)   b) {{expression}}
   c) {{{expression}}}   d) [expression]

11) Which of the following syntax is used to create a module in AngularJS?
   a) var myModule = angular.module ( );
   b) var myModule = new Module ( );
   c) module ("app", [ ]);
   d) none of the above

12) Using _____ you can share data between controller and view.
   a) $ Scope   b) Services
   c) Factory   d) $ Rootscope

13) _____ directive is used to start an angularJs application.
   a) ng-init   b) ng-app
   c) ng-controller   d) ng-model

14) _____ is not a validation directive in angularJS.
   a) ng-app
   b) ng-required
   c) ng-minlength
   d) ng-pattern

15) Variable name in PHP starts with.
   a) !(Exclamation)   b) $(Dollar)
   c) &(Ampersand)   d) #(Hash)

16) Which of the following is used to display the output in PHP?
   a) Echo   b) Write
   c) Print   d) Both (a) & (c)

17) Which of the following is the correct way to create a function in PHP?
   a) Create myFunction( )
   b) New-function myFunction( )
   c) Function myFunction( )
   d) Create function myFunction( )

18) Which of the following function is used to set cookie in PHP?
   a) Createcookie ( )   b) Makecookie ( )
   c) Setcookie ( )   d) None of the above

19) PHP stands for
   a) Hypertext Preprocessor   b) Pretext Hypertext Preprocessor
   c) Personal Home Processor   d) None of the above

20) What will be the output of the following program?
   <?php
        $ var 1 = "Hello";
        $ var 2 = "World";
        echo $var1, $var2;
   ?>
   a) HelloWorld
   b) Hello, World
   c) Hello World
   d) Hello + World

Q2) a) Explain Event handling in Node. js with suitable example.   **[5]**

   b) Write a program to display string in uppercase & lowercase using Angular JS filters.   **[5]**

<div align="center">OR</div>

   a) Explain ng-app, ng-model and hg-bind with suitable example.   **[5]**

   b) Write a program for multiplication of 2 numbers using event handling in node. js. Call multiplication function as an event call.   **[5]**

Q3) a) What is Node. js? Explain its working & features? **[5]**

b) Create a login form, both username & password fields are mandatory, after entering the values transfer user control to next web page showing message as "You have login successfully". (Use ng-href & ng-required).**[5]**

OR

a) Explain routing in AngularJS with suitable example. **[5]**

b) Write a program to show current date and time using user defined module in node. js. **[5]**

Q4) a) Explain video & svg tag in HTML 5 with suitable example. **[4]**

b) Write a pHp script to demonstrate multidiamensional arrays. **[4]**

c) What is cookie & session in PHP **[2]**

OR

a) What is HTML5. Explain its features and advantages. **[4]**

b) Write a PHP script to create a database using MYSQL. **[4]**

c) What is Define function in PHP. **[2]**

Q5) a) What is pseudo classes in CSS explain with suitable example. **[4]**

b) Write a PHP script to design a form for exam registration. Insert 5 records in database and display all the inserted records on new page. **[6]**

OR

a) What are the objectives of CSS architecture. **[4]**

b) Write a PHP script to design a form to reschedule the journey dates of flights and display the updated information on new web page. **[6]**

✧   ✧   ✧

[5865] - 204

F.Y. M.C.A. (Management)
IT - 24 : ADVANCED DBMS
(2020 Pattern) (Semester - II)

Time : 2½ Hours]   *[Max. Marks : 50*

Instructions to the candidates:
   1)   ***All questions are compulsory.***
   2)   ***Figures to the right indicates full marks.***

Q1) Write correct option or filling the blanks of following questions (each ½ mark).

                                                                             [10]

   1)   Full form of OQL is _____.
      a)   Object Oriented Language b)   Object Query Language
      c)   Object Quantum Language d)   Object Query Logic

   2)   A database which is able to handle complex relationship _____.
      a)   DBMS   b)   File
      c)   Information   d)   OODBMS

   3)   A DBMS uses a transaction _____ to keep track of all transaction that update the database.
      a)   log   b)   table
      c)   block   d)   statement

   4)   A timestamp ordering scheme ensures _____.
      a)   Serializability   b)   Cascading
      c)   Atomicity   d)   Consistency

   5)   DBMS running across multiple processors called as _____.
      a)   Distributed system   b)   Parallel system
      c)   Centralized system   d)   None

   6)   In an E-R Diagram entities are represented by _____.
      a)   Circle   b)   Rectangle
      c)   Diamond   d)   Ellipse

   7)   Rows of a relation are called _____.
      a)   tuple   b)   a relation
      c)   a data structure   d)   an entity

8) Which of the constraint can be enforced one per table _____.
   a) Primary key
   b) Not null
   c) Foreign key
   d) Check

9) Which of the following cannot be taken as a primary key?
   a) Id   b) Register Number
   c) Dept - Id   d) Street

10) Which of the following is not NOSQL Database?
    a) Cassandra   b) MongDB
    c) SQL selver   d) None of the above

11) What are the type of NOSQL Database.
    a) Document database
    b) Key value store
    c) Graph of column-oriented database
    d) All of the above

12) The core principle of NOSQL is:
    a) High availability   b) Low availability
    c) Both high & low availability d) None of the above

13) Which of the following is not a type of data base?
    a) Hierarchical   b) Network
    c) Distributed   d) Decentralized

14) The ability to query data as well as insert, delete alter is offered by
    a) TCL (Transaction Control language)
    b) DCL (Data Control Language)
    c) DDL (Data Definition Language)
    d) DML (Data manipulation Language)

15) A distributed transaction can be _____ if queries are issued at one or more nodes.
    a) Fully read-write   b) Partially read-write
    c) Partially read-only   d) Fully read-only

16) Which statement is used to revoke an authorization.
   a) Revoke   b) Modify
   c) Alter   d) Commit

17) A distributed database has which of the following advantages over a centralized database?
   a) Software complexity
   b) Slow response
   c) Modular growth
   d) Software cost

18) In which year NOSQL was released
   a) 1996   b) 1997
   c) 1998   d) 1999

19) Which of the following is a NOSQL Database?
   a) SQL   b) JSON
   c) Document Database   d) All of the above

20) A schedule in which each transaction is executed atomically is called a
   _____.
   a) Non serial schedule
   b) Serial schedule
   c) Parallel schedule
   d) Non paralled schedule

Q2) Draw the E-R Diagram for the following system & explain notation & Relationship XYZ hospital is a multispeciality hospital that includes a names of department, rooms, Doctors, nurses, compounders of other working staff. Patient having different kind of ailments come to the hospital of get checkup done from the concerned doctors. If required they are admitted in the hospital of discharged after treatment. The aim of this case study is to design and develop a database for the hospital to maintain the records of various department, rooms and doctors in the hospital. It also maintains records of the regular patients, patient admitted in the hospital, the checkup of patient done by the doctors, the patients that have been operated and patient discharged from the hospital.   **[10]**

OR

What is meant by lock? Explain two phase locking protocal for concurrency control with example.   **[10]**

Q3) a) Describe the data base 3-tier schema architecture? **[5]**
    b) Write short note on mobile database. **[5]**

OR

a) What is need of the Database? Write characteristics of DBMS. **[5]**

b) Write the characteristics of OODDMS. **[5]**

Q4) a) Write the log based recovery techniques with example? **[5]**
    b) Write short note on Grant and revoking privilege with example. **[5]**

OR

a) What is Database Backup of types of backup? **[5]**

b) Write short note on mandatory Access control. **[5]**

Q5) Explain the Inter query of Intraquery parallelizm in details with example. **[10]**

OR

Explain different between homogeneous and hetrogeneous database with example. **[10]**

✿ ✿ ✿

[5865] - 205

First Year M.C.A. (Management Faculhy)
MT-21 : OPTIMIZATION TECHNIQUES
(2020 Pattern) (Semester - II)

Time : 2½ Hours]   *[Max. Marks : 50*
Instructions to the condidates:
 1)   *All questions are compulsory.*
 2)   *Use of statistical table and non programmable calculator is allowed.*
 3)   *Figures to the right indicate full marks.*

Q1) Attempt the following MCQs (0.5 mark each)   **[10]**

  i)   A minimization problem can be converted into maximization problem by changing the sign of coefficients in the _____
       a)   Constraint   b)   Objective Function
       c)   Both a and b   d)   None of the Above

  ii) The order in which machines are required for completing job is called as
       a)   Machine order   b)   Job order
       c)   Processing order   d)   Working order

  iii) Floats for critical activities will be always
       a)   one   b)   zero
       c)   highest   d)   same as duration of the activity

  iv) Problems based on the phenomenon of decision making under risk are referred to as_____.
       a)   Numerical problem   b)   Complex problem
       c)   Probabilistic problem   d)   None of above

  v)   The saddle point in a payoff matrix is always the _____.
       a)   largest number in the matrix
       b)   smallest number in its column and the smallest number in its row
       c)   smallest number in the matrix
       d)   largest number in its column and the smallest number in its row

vi) As simulation is not an analytical model, therefore the result of simulation must be viewed as
    a)   Unrealistic   b)   Exact
    c)   Approximation   d)   Simplified

vii) If in a LPP, the solution of a variable can be made infinity large without violating the constraints, the solution is _____.
    a)   Infeasible   b)   Unbounded
    c)   Alternative   d)   None of the above

viii) In sequencing if smallest time for a job belongs to machine A then that job has to placed towards _____ in the sequence.
    a)   right   b)   left
    c)   centre   d)   none of the Above

ix) Backward Pass calculation are done to find _____ occurance times of events.
    a)   tentative   b)   definite
    c)   latest   d)   earliest

x) In the Hurwicz approach, coefficient of Pessimism is denoted by
    a) α b) $1-\alpha$
    c) $1/\alpha$ d) α^2

xi) In a mixed strategy, each player should optimize the
    a)   maximum payoffs   b)   lower value of the game
    c)   maximum   d)   expected gain

xii) A problem is classified as Markov chain provided
    a)   There are finite number of possible states
    b)   States are collectively exhaustive & mutually exclusive
    c)   Long-run probabilities of being in a particular state will be constant over time
    d)   All of the Above

xiii) In simplex method, if there is tie between a decision variable and a slack (or surplus) variable for entering, _____ should be selected.

a) Slack variable   b) Surplus variable

c) Decision variable   d) None of the above

xiv) To identify the optimal sequence, a 3 machine (Three machine) problem has to be converted into _____ machine problem.

a) 1   b) 2

c) m   d) none of the above

xv) CPM stands for _____

a) Control Path Method   b) Critical Path Method

c) Control Path Management   d) Critical Plan Management

xvi) The minimin criterion is used when consequences are given in the form of _____

a) Probabilities   b) Table

c) Opportunity loss   d) Payoff

xvii) Each player should follow the same strategy regardless of the other player's strategy in which of the following games?

a) Constant strategy   b) Mixed strategy

c) Pure strategy   d) Dominance strategy

xviii) In Markov analysis, state probabilities must

a) Sum to one   b) Be less than one

c) Be greater than one   d) None of the above

xix) _____ are the entities whose values are to be determined from the solution of the LPP.

a) Objective function   b) Decision variables

c) Constraints   d) Opportunity costs

xx) The longest path in the network diagram is called path

a) best   b) worst

c) sub-critical   d) critical

Q2) a) Solve the following LPP [6]

Maximize $Z = -2x_1 - x_3$

Subject to

$x_1 + x_2 - x_3 \geq 5$
$x_1 - 2x_2 + 4x_3 \geq 8$
$x_1, x_2, x_3 \geq 0$

b) Solve the game for the given pay-off matrix [4]

-5	3	1	20
5	5	4	6
-4	-2	0	-5

OR

a) Solve the following LPP [6]

Maximize $Z = 3x_1 + 2x_2$

Subject to constraints:

$x_1 + x_2 \leq 4$
$x_1 - x_2 \leq 2$
$x_1, x_2 \geq 0$

b) The following is the pay-off matrix of a game being played by A and B. Determine the optimal strategies for player and the value of the game.

[4]

B's strategy

A's strategy		B_1	B_2
	A_1	9	-6
	A_2	-5	5

Q3) a) The following information regarding a project is given **[6]**

Activity	Immediate Predecessor	Most optimistic	Most likely	Most pessimistic
A	-	4	6	8
B	A	5	7	15
C	A	4	8	12
D	B	15	20	25
E	B	10	18	26
F	C	8	9	16
G	E	4	8	12
H	D,F	1	2	3
I	G,H	6	7	8

(The "Most optimistic", "Most likely", "Most pessimistic" columns are grouped under "Time in days".)

   i) Construct an arrow diagram for this problem.

   ii) Determine the critical path and compute the expected completion time.

   iii) Determine the probability of completing the project in 55 days.

b) Consider the following profit table along with given probabilities of each state. **[6]**

	States		
	N_1	N_2	N_3
	Probabilities		
Strategies	0.3	0.6	0.1
S_1	20	18	−9
S_2	25	15	10
S_3	40	−10	12

Calculate

   i) EMV

   ii) EVPI

   iii) VPI

OR

a) For the data given in the table below, draw the network, crash systematically the activities and determine the optimal project duration and cost. **[6]**

Activity	Time(week) Normal	Time(week) Crash	Cost in Rs. (000)	Cost in Rs. (000) Crash
1-2	2	1	10	15
1-3	8	5	15	21
2-4	4	3	20	24
3-4	1	1	7	7
3-5	2	1	8	15
4-6	5	3	10	16
5-6	6	2	12	36

i) Draw the project network.
ii) Determine the critical path & the normal duration and associated cost.
iii) Crash the activities so that the project completion time reduces to 9 weeks, with minimum additional cost.

b) A manufacturer of cycle has estimated the following distribution of demand for a particular type of bicycle. **[6]**

Demand	0	1	2	3	4	5	6
Probability	0.14	0.27	0.27	0.18	0.09	0.04	0.01

Each cycle costs his Rs. 7,000 and he sells them Rs. 10,000 each. Any cycle that are left unsold at the end of the season must be disposed off for Rs. 6,000 each. How many cycles should be in the stock so as to maximize his expected profit?

Q4) a) A company has to process five items on three machines A, B and C. Processing times are given in the following table. **[6]**

Item	Ai	Bi	Ci
1	4	4	6
2	9	5	9
3	8	3	11
4	6	2	8
5	3	6	7

i) Find the sequence that minimizes the total elapsed time.
ii) Find the idle times for all the machines.

b) The number of units of an item that are withdrawn from the inventory on a day to day basis is a Markov chain process in which the requirements for tomorrow depend on today's requirements. A one-day transition matrix is given below. **[4]**

		Tomorrow		
		5	10	12
	5	0.6	0.4	0.0
Today	10	0.3	0.3	0.4
	12	0.1	0.3	0.6

i) Develop a two day transition matrix.

ii) Comment how a two - day transition matrix might be helpful to a manager who is responsible for the inventory management.

OR

a) Seven Jobs are to be processed through 2 machines A and B. Processing times (in hours) are given below: **[6]**

Jobs	1	2	3	4	5	6	7
Machine A:	10	9	7	15	18	20	14
Machine B:	12	8	7	12	10	6	13

Find the elapsed time and idle times for machnies A and B.

b) The present market shares of three brands of soft drinks are 60%, 30% and 10% respectively. The transition probability matrix is as follows: **[4]**

$$P = \begin{pmatrix} 0.7 & 0.2 & 0.1 \\ 0.2 & 0.6 & 0.2 \\ 0.1 & 0.1 & 0.8 \end{pmatrix}$$

i) Find their expected market shares after two years.

ii) Find their long-term market shares.

Q5) a) Rainfall distribution in monsoon season as follows: **[4]**

Rain in cm	0	1	2	3	4	5
Probability	0.50	0.25	0.15	0.05	0.03	0.02

Simulate the rainfall for 10 days using following random numbers 67, 63, 39, 55, 29, 78, 70, 6, 78, 76. Find the average rainfall.

b) Explain the following terms with example. **[4]**

i) Degeneracy

ii) Multiple optimal solution in LPP

OR

a) A bakery keeps stock of a popular brand of cake. Previous experience shows the daily demand pattern for the item with associated probabilities, as given below: **[4]**

Daily demand (number)	0	10	20	30	40	50
Probability	0.01	0.20	0.15	0.50	0.12	0.02

Use the following sequence of random numbers to simulate the demand for next 10 days.

Random numbers : 25, 39, 65, 76, 12, 05, 73, 89, 19, 49

Also estimate the daily average demand for the cakes on the basis of the simulated data.

b) Explain the following terms with examples: **[4]**

i) Dummy activity

ii) Optimistic time.

[5865] - 301

S.Y. M.C.A. (Management)
IT - 31: MOBILE APPLICATION DEVELOPMENT
(2020 Pattern) (Semester - III)

Time : 2½ Hours]   *[Max. Marks : 50*
Instructions to the candidates:
   1)   *All questions are compulsory.*
   2)   *Figures to the right indicate full marks.*

Q1) Multiple Choice Questions: **[10]**

For each of the following multiple choice questions, choose the correct answer.

i)   Android is based on which kernel.
     a)   Linux   b)   Windows
     c)   Mac   d)   Redhat

ii)   What is an Activity?
     a)   A single screen with UI
     b)   A layout
     c)   A Fragment
     d)   None of the above

iii)   In which Directory XML Layout Files are stored?
     a)   /assets   b)   /src
     c)   /res/values   d)   /res/layout

iv)   ADB stands for
     a)   Android Driver Bridge
     b)   Android Debug Bridge
     c)   Android Delete Bridge
     d)   Android Destroy Bridge

v)   An Android _____ is an abstract description of an operation to be performed. It can be used to start Activity to launch an activity.
     a)   Filters   b)   Intent
     c)   Service   d)   Broadcast Receiver

vi)   SQLite is a?
     a)   No SQL database   b)   Distributed database
     c)   Relational database   d)   Operational database

P.T.O.

vii) Which of the following is not a layer in Android Architecture?

a) Libraries   b) Linux kernel

c) Android Runtime   d) Application Framework

viii) The extras can be set and read using the?

a) setExtras ( ) and getExtras ( ) methods

b) putExtras ( ) and getExtras ( ) methods

c) setsExtras ( ) and getsExtras ( ) methods

d) None of the above

ix) Which of the following is Application development environments for iOS?

a) Cocoa   b) Cocoa touch

c) Cocoa iOS   d) Cocoa begin

x) _____ sets the gravity of a view or layout in its parent.

a) Android : gravity   b) Android : Layout-gravity

c) Android : weight   d) Android : orientation

xi) Among the following choose the one which convert Java byte code into Dalvik byte code.

a) Dex compiler

b) Mobile Interpretive compiler

c) Dalvik converter

d) None of the above

xii) _____ means it will occupy the complete space available on the display of the device.

a) Wrap-content   b) Match-content

c) Match-parent   d) Wrap-parent

xiii) React Native ApI accepts two methods as

a) alert ( ), prompt ( )   b) get ( ), post ( )

c) get ( ), alert ( )   d) post ( ), prompt ( )

xiv) What does ES6 stands for?

a) ECMA Script 6   b) ECMA 6

c) ECMA Javascript 6   d) EJavascript 6

xv) Firebase is a backend platform for building _____.

    a)   Web application   b)   iOS application

    c)   Android application   d)   All the above

xvi) Which of the following Android view sub-classes uses the webkit rendering engine to display web pages?

    a)   Page view   b)   Web view

    c)   Map view   d)   Http client

xvii) What is Dart?

    a)   Dart is object oriented programming language

    b)   Dart is used to create a frontend user interface

    c)   Both a and b

    d)   None of the above

xviii) JSON stands for _____.

    a)   Java Standard Output Network

    b)   Java Script Object Notation

    c)   Java Script Output Name

    d)   Java Source Open Network

xix) Flutter developed by?

    a)   Oracle   b)   Facebook

    c)   Google   d)   IBM

xx) For creating Fragments the Java class needs to extend which base class?

    a)   Main Activity

    b)   Mini Activity

    c)   Fragment

    d)   None of the above

Q2) Explain android Architecture with a neat diagram.   **[6]**

<p style="text-align:center">OR</p>

Explain iOS Architecture with a neat diagram.   **[6]**

Q3) a) What is Activity? Explain Activity Life cycle. **[6]**

b) Demonstrate Array Adapter using Listview to display list of five subjects. **[6]**

OR

a) What is Fragment? Explain Fragment Life cycle. **[6]**

b) Design android application for login activity. Write an android code to check login credentials with username = "SPPU" and password = "Exam". Display appropriate message on Toast to the user. **[6]**

Q4) a) Write an android application using SQLite to create employee (eid, ename, edept, esalary) table and insert a record in table and display appropriate message on toast to user. **[6]**

b) Write a short note on JSON parsing with example. **[6]**

OR

a) Explain cursor in android with suitable example. **[6]**

b) Demonstrate webview to display a webpage in an android application. **[6]**

Q5) a) What is Flutter? Explain Architecture of Flutter. **[6]**

b) Explain Android Menu. **[4]**

OR

a) What is React Native? State the advantages of React Native. **[6]**

b) What is view? Explain any two views with suitable Example. **[4]**

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[5865] - 302

M.C.A. (Management)
IT 32: DATA WAREHOUSING AND DATA MINING
(2020 Pattern) (Semester - III)

Time : 2½ Hours]   *[Max. Marks : 50*

Instructions to the candidates:
1) *All questions are compulsory.*
2) *Draw neat & labelled diagram wherever necessary.*

Q1) Answer the following multiple choice questions.   **[20×½=10]**

   i)   Find the wrong statement of the K-means clustering.

        a)   K-means clustering is a method of vector quantization.

        b)   K-means neighbour is same as K-nearest.

        c)   K-means clustering aims to partition 'n' observations into K clusters.

        d)   K-means clustering produces the final estimate of cluster centroids.

   ii)   How many tier data warehouse architecture?

        a)   2   b)   1

        c)   3   d)   4

   iii) _____ is an intermediate storage area used for data processing in ETL process of data warehousing.

        a)   Buffer   b)   Virtual memory

        c)   Staging area   d)   Inter storage area

   iv) _____ is a good alternative to the star schema.

        a)   Star schema   b)   Snowflake schema

        c)   Fact constellation   d)   Star-snowflake schema

   v)   In a snowflake schema which of the following types of tables are considered?

        a)   Fact   b)   Dimension

        c)   Both fact and dimension   d)   None of the mentioned

vi) The role of ETL is to _____.
   a) Find erroneous data
   b) Fix erroneous data
   c) Both finding and fixing erroneous data
   d) Filtering of the data source

vii) _____ is a data transformation process.
   a) Comparison   b) Projection
   c) Selection   d) Filtering

viii) OLTP stands for _____.
   a) Online Transaction Protocol
   b) Online Transaction Processing
   c) Online Terminal Protocol
   d) Online Terminal Processing

ix) An approach in which the aggregated totals are stored in a multidimensional database while the detailed data is stored in the relational database is a _____
   a) MOLAP   b) ROLAP
   c) HOLAP   d) OLAP

x) Summary of data from an OLAP can be presented in _____.
   a) Normalization   b) Primary keys
   c) Pivot Table   d) Foreign keys

xi) Efficiency and scalability of data mining algorithm is related to _____.
   a) Mining methodology   b) User interaction
   c) Diverse data types   d) None of the mentioned

xii) Strategic value of data mining is _____.
   a) Cost sensitive   b) Work sensitive
   c) Time-sensitive   d) Technical-sensitive

xiii) If the ETL process featches the data separately from the host server during the automatic load to the data warehouse, one of the challenge involved is _____
   a) the associated network may be down
   b) it may end up pulling the incomplete /incorrect file.
   c) it may end up connecting to an incorrect host server.
   d) None

xiv) Webmining helps to improve the power of web search engine by identifying _____

    a)   Web pages and classifying the web documents

    b)   XML documents

    c)   Text documents

    d)   Database

xv)   _____ is achieved by splitting the text into white spaces.

    a)   Text cleanup   b)   Tokenization

    c)   Speach tagging   d)   Text transformation

xvi) Assigning data to one of the clusters and recompute the centroid are the steps in which algorithm.

    a)   Apriori algorithm   b)   Bayesian classification

    c)   FP tree algorithm   d)   K-mean

xvii) A disadvantage of KNN algorithm is, it takes _____

    a)   More time for training

    b)   More time for testing

    c)   Equal time for training

    d)   Equal time for testing

xviii) Which is not a characteristics of Data warehouse?

    a)   Volatile

    b)   Subject oriented

    c)   Non volatile

    d)   Time varient

xix) What is the first stage of Kimball Life Cycle diagram.

    a)   Requirement Definition   b)   Dimensional Modelling

    c)   ETL Design Development d)   Maintenance

xx) A connected region of a multidimensional space with a comparatively high density objects.

    a)   Clustering   b)   Association

    c)   Classification   d)   Subset

Q2) a) What is a Data warehouse. Explain the need and characteristics of Data warehouse. **[5]**

b) Explain the schemas of Data warehouse. **[5]**

OR

a) Explain Kimball Life Cycle diagram in detail. **[5]**

b) What is a Data warehouse? Explain the properties of Data warehouse architecture. **[5]**

Q3) a) What is ETL? Explain data preprocessing techniques in detail. **[6]**

b) What is OLAP? Describe the characteristics of OLAP. **[4]**

OR

a) Describe ETL. What are the tasks to be performed during data transformation. **[6]**

b) What are the basic operations of OLAP? **[4]**

Q4) a) What is Data mining? Explain the architecture of Data mining. **[3]**

b) Apply FP Tree Algorithm to construct FP Tree and find frequent itemset for the following dataset given below (minimum support = 30%) **[7]**

Transaction ID	List of Products
1	Apple, Berries, Coconut
2	Berries, Coconut, Dates
3	Coconut, Dates
4	Berries, Dates
5	Apple, Coconut
6	Apple, Coconut, Dates

OR

a) Explain data mining techniques in brief. **[3]**

b) How does the KNN algorithm works? **[7]**

Apply KNN classification algorithm for the given dataset and predict the class for $X(P_1 = 3, P_2 = 7)$ (K = 3)

P_1	P_2	Class
7	7	False
7	4	False
3	4	True
1	4	True

Q5) a) What is text mining? Explain the process of text mining. **[4]**

b) Explain K-means algorithm. Apply K-means algorithm for group of visitors to a website into two groups using their age as follows:

15, 16, 19, 20, 21, 28, 35, 40, 42, 44, 60, 65

(Consider initial centroid 16 and 28 of two groups) **[6]**

OR

a) Apply K-means algorithm for the given data set where K is the cluster number D = {2, 3, 4, 10, 11, 12, 20, 25, 30}, K = 2. **[6]**

b) What are the different types of web mining? **[4]**

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S.Y. M.C.A. (Management)
IT 33 : SOFTWARE TESTING AND QUALITY ASSURANCE
(2020 Pattern) (Semester - III)

Time : 2½ Hours]　　　　　　　　　　　　　　　　　　　　　　*[Max. Marks : 50*
Instructions to the candidates: .
　　1)　*Q.1 & Q.7 are compulsory.*
　　2)　*Solve any four questions from Q.2 to Q.6.*

Q1) a)　Write detail test plan for online registration & examination application. Candidate will register through valid email ID & will book date & time slot from available dates & time slots. Candidate will select subject from list of subjects given. Application will send user ID & password to the candidates email ID. On the date & time, candidate will login with given user ID & Password Application will display multiple choice questions & will accept choice from candidate. At the end of given time, application will display the marks.　　**[8]**

　　　　b)　Design suitable test cases for above application.　　**[4]**

Q2) Define software quality assurance. Also explain SQA activities.　　**[8]**

Q3) Explain various techniques of software reviews. Also compare them.　　**[8]**

Q4) Explain various black box testing techniques with reference to entry of MCA sem III marks data entry.　　**[8]**

Q5) Explain type of testing tools. Also explain their benefits & risks.　　**[8]**

Q6) Explain non functional testing. Also compare localization & internationalization.　　**[8]**

Q7) Write short note on any two. [6]

a) Software quality metrics.

b) 'V' model of testing.

c) Experience based testing.

d) Defect life cycle.

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[5865] - 305

S.Y. M.C.A. (Management Faculty)
IT - 35: CLOUD COMPUTING
(2020 Pattern) (Semester - III)

Time : 2½ Hours]   *[Max. Marks : 50*
Instructions to the candidates:
  1) *All questions are compulsory.*
  2) *Figures to the right indicate full marks.*

Q1) Write correct option or filling the blanks of following questions.(each ½mark)

[10]

i)   Which one of the following is cloud platform by microsoft?

   a)   Azure   b)   AWS

   c)   Cloudera   d)   None of the above

ii) Which of the following are the features of cloud computing?

   a)   Security   b)   Availability

   c)   Large Network access   d)   All of the mentioned

iii) Which of the following is a type of cloud computing services?

   a)   Service-as-a-Software (SaaS)

   b)   Software-and-a-Server (SaaS)

   c)   Software-as-a-Service (SaaS)

   d)   Software-as-a-Server (SaaS)

iv) Who is the father of cloud computing?

   a)   Sharon B. Codd   b)   Edgar Frank Codd

   c)   J.C.R. Licklider   d)   Charless Bachman

P.T.O.

v) Which of the following is not a type of cloud server?
   a) public cloud servers   b) private cloud servers
   c) dedicated cloud servers   d) merged cloud servers

vi) Which one of the following cloud concepts is related to sharing and pooling the resources?
   a) Polymorphism   b) Virtualization
   c) Abstraction   d) None of the mentioned

vii) Which of the following is an essential concept related to cloud?
   a) Reliability   b) Abstraction
   c) Productivity   d) All of the mentioned

viii) Which of the following type of virtualization is also characteristic of cloud computing?
   a) Storage   b) Application
   c) CPU   d) All of the mentioned

ix) Which of the following is used to aid for locating services in SOA?
   a) databus   b) Catalog service
   c) Data abstraction services d) All of the mentioned

x) How many different protocol types are required for message passing in SOA?
   a) 2   b) 4
   c) 1   d) 3

xi) Which is the Need of SOA?
   a) Scalability   b) Adaptivity
   c) Robustness   d) None of these

xii) A _____ level Agreement (SLA) is the contract for performance negotiated between you and a service provider.
   a) Application   b) Service
   c) Deployment   d) All of the mentioned

xiii) Combination of cloud computing architecture is _____.
   a) service-oriented architecture and grid computing
   b) utility computing and event-driven architecture
   c) virtualization and event-driven architecture
   d) service-oriented architecture and event-driven architecture

xiv) Broadly divide the cloud architecture into?
   a) 2   b) 3
   c) 4   d) 5

xv) The data used by multiple processor is called _____.
   a) Shared data   b) Protected data
   c) Private data   d) Public data

xvi) Which of these is Identity in IAM?
   a) Users   b) Groups
   c) Roles   d) All of these

xvii) IAM group:
   a) Is same as IAM users
   b) Can be used to specify permission for a collection of users
   c) Is truly an identity
   d) All of these

xviii) Which of the following service provider provides the least amount of built in security?
   a) SaaS   b) PaaS
   c) IaaS   d) All of the mentioned

xix) What are the features of docker?
   a) Easy modelling   b) Version control
   c) Placement   d) All of the above

xx) Identity the component of the docker?
   a) Image   b) Platform image
   c) Container   d) All of the above

Q2) What are benefit and challenges of cloud computing? Explain the term of SaaS, PaaS & IaaS. **[10]**

OR

What is cloud computing? Explain in details cluster computing and Grid computing? **[10]**

Q3) a) What is the Virtualization & write the type of Virtualization? **[5]**

b) Define the Service Oriented Architecture and the concept of SOA. **[5]**

OR

a) What is Virtual Machine (VM)? Write on open source virtualization manager? **[5]**

b) Write short note on cloud Governances. **[5]**

Q4) a) Write short note on the Cloud Computing Architecture? **[5]**

b) Write the data migration in cloud strategies & process? **[5]**

OR

a) Write the multi-cloud Architecture and its benefit & challenges? **[5]**

b) What is the concept of cloud Bursting? **[5]**

Q5) Explain the cloud computing privacy and security challenges in details? **[10]**

OR

Explain in details the identity management & Access control? **[10]**

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[5865] - 401

S.Y. M.C.A. (Management)

COMPUTER MANAGEMENT

421 : IT 41 - DevOps

(2020 Pattern) (Semester - IV)

Time : 2½ Hours] [*Max. Marks : 50*

Instructions to the candidates:

   1)   *All questions are compulsory.*

   2)   *Figures to the right indicate full marks.*

Q1) Multiple Choice Questions. [10]

   i)   What are the key components of DevOps?

      a)   Continuous Integration

      b)   Continuous Testing

      c)   Continuous Delivery & Monitoring

      d)   All of the above

   ii)   What are the Business advantages of DevOps?

      a)   Faster delivery of features

      b)   Less stable operating Environments

      c)   More time available to add value.

      d)   a & b correct

   iii)   What is the full form of GIT?

      a)   Gastro Intestinal Track

      b)   Gastro International Track

      c)   Global Information Tracker

      d)   None of these

P.T.O.

iv) Which of the following commands used to show all parameters in git?

    a) $ git config -- List   b) $ git config - a

    c) $ git config -- all   d) $ git config -- parameters-list

v) _____ command is to create git branch.

    a)   git checkout <branch Name>

    b)   git create-branch (branch Name)

    c)   git branch <branch Name>

    d)   git - b <branch Name>

vi) Which command is used to print file?

    a)   print   b)   ptr

    c)   lpr   d)   none of the above

vii) Write the command to display the current date in the form of dd/mm/yyyy.

    a)   date + %d/%m/%y   b)   date + "%d/%m/%y"

    c)   date + "%d/%m/20%y"   d)   date + %d/%m/20%y

viii) Command to check the created, modified, deleted files in gitbash before commit.

    a)   git show   b)   git log

    c)   git status   d)   all of the above

ix) _____ command is used to display the environment variables only.

    a)   set   b)   env

    c)   sh   d)   var

x) What's a shortcut to staging all the changes you have?

    a)   Git commit add   b)   Git commit

    c)   Git add   d)   Git stage - a

xi) Which of the following is true about chef server?

    a)   The chef server is the central store of your infrastructure configuration data.

    b)   The chef server stores the data necessary to configure your nodes & provides search.

    c)   It's powerful tool that allows you to dynamically drive node configuration based on data.

    d)   All of the above

xii) How many ways to setup a chef server?

    a)   1   b)   2

    c)   3   d)   4

xiii) A Docker registery is a place to store and distribute docker.

    a)   Codes   b)   Images

    c)   Files   d)   All of the above

xiv) Which command is used for running the images as a container?

    a) $ docker PS

    b) $ sudo docker run container name

    c) $ sudo docker run-i-t alpine/bin/bash

    d)   All of the above

xv) _____ is a configuration management tool for dealing with machine setup on physical servers.

    a)   Cook books   b)   Chefs

    c)   Chef infra   d)   Work station

xvi) Which of the following command removes the target directory with all the build data before starting build process.

    a)   mvn clean   b)   mvn build

    c)   mvn compile   d)   mvn site

xvii) Which one of the following command should you run to see all running container in Docker?

    a) $ docker PS   b) $ docker SP

    c) $ docker all   d)   All of the above

xviii) What are the advantages of using Docker container?

    a)   Offers an efficient and easy initial setup.

    b)   Documentation provides every bit of information

    c)   Allows you to describe your application life cycle in detail

    d)   All of the above

xix) Which of the following is not software development life cycle model?

    a)   Agile Model   b)   RAD Model

    c)   Prototype Model   d)   Autonomous Model

xx) DevOps culture is about _____ between Dev and Ops.

    a)   Collaboration   b)   Speed

    c)   Stability   d)   Testability

Q2) a)   Explain DevOps Life cycle?   **[5]**

    b)   What is a distributed VCS?   **[5]**

<div align="center">OR</div>

    a)   What are the fundamental differences between DevOps & Agile.   **[5]**

    b)   What is the difference between git pull and git fetch?   **[5]**

Q3) a)   Explain chef components.   **[5]**

    b)   What does a Node represent in chef?   **[5]**

<div align="center">OR</div>

    a)   Explain the use of knife in chef.   **[5]**

    b)   List types of handlers in chef and explain it.   **[5]**

Q4) a)   How does Maven works?   **[5]**

b)   Explain Maven build life cycle.   **[5]**

OR

a)   What are different types of Maven repositories?   **[5]**

b)   What is Maven - release plugin and how does it work?   **[5]**

Q5) How do you configure a GIT Repository to run code sanity checking tools right before making commits, and preventing them if test fails?   **[10]**

OR

Write and explain, different phases of Maven build life cycle.   **[10]**

[5865] - 402

S.Y. M.C.A. (Management)

422: PPM AND OB (BM 41)

(2020 Pattern) (Semester - IV)

Time : 2½ Hours]   *[Max. Marks : 50*

Instructions to the candidates:

   1)   All questions are compulsory.

   2)   All questions carry equal marks.

Q1) Select correct choice.   **[10]**

   i)   In Management Process, the most misinterpreted wond is,

         a)   Organizing   b)   Delegating

         c)   Controlling   d)   Planning

   ii)   _____, weakness, threats, opportunities are the long term as SWOT analysis.

         a)   Strength   b)   Standard

         c)   Strategy   d)   Structure

   iii) A decision made before the occurrence of an external or internal changes called a decision.

         a)   Reactive   b)   Proactive

         c)   Intutive   d)   Systematic

   iv)   In the Tuckman model, groups at the _____ stage develop guidelines and standards as acceptable behavior.

         a)   Storming   b)   Norming

         c)   Forming   d)   Adjourning

P.T.O.

v) What does situational theory of leadership emphasize?

a) Personality traits   b) Events

c) Environment   d) Political situation

vi) What are the key characteristics of transactional leaders?

a) Guiding mentoring and motivating

b) Guiding commanding and motivating

c) Guiding, demonstrating and motivating

d) Guiding mentoring and demonstrating

vii) Positive motivation makes people willing to do their work in the best way they can and improve their.

a) Efficiency   b) Performance

c) Skills   d) Worth

viii) Who propounded X and Y theory of motivation

a) Maslow   b) F. Herzberg

c) Alderfer   d) Mc Gregor

ix) Delegation becomes a necessity due to the following reasons.

a) Structure of authority

b) Accountability

c) Superiors need to address important issues

d) Authority, Accountability and superiors need to address important issues.

x) _____ is the dynamic organization within the individual that determine his unique adjustment to the environment.

a) Perception   b) Behaviour

c) Attitude   d) Personality

xi) Which of the following is a method of measuring attitude?

  a) Opinion survey

  b) Interview

  c) Scaling techniques

  d) Survey, Interview & scaling techniques

xii) Goal setting theory is Pioneered by

  a) Stacy Adams   b) Charms

  c) Edwin Locke   d) F.W. Taylor

xiii) Whose feelings and difficulties should the manager know for direction to become effective

  a) Subordinates   b) Family

  c) Society   d) Management

xiv) Which of the following is not the characteristics of conflict?

  a) expressed struggle

  b) Perceived interference for outside parties

  c) Perceived incompatible goals

  d) independent parties

xv) Which of the following is a tactic of avoiding conflict?

  a) Competing   b) Stonewalling

  c) Autonomy   d) Compromising

xvi) Most conflicts have their roots in uncertanity, and negotiation is the way of managing the

  a) Resultant Risk   b) Failure

  c) Uncertainty   d) Inputs

xvii) It is said that always lines of _____ should be open.

    a)   Production   b)   Communication

    c)   Business   d)   None of the above

xviii) Johari window is given by,

    a)   Herbert Simon

    b)   Joseph Luft & Harry Ingham

    c)   Chester Bernord

    d)   Maslow's

xix) According to Freud, which of the following is our conscious self?

    a)   The super ego   b)   The ego

    c)   The Id   d)   Personal problems

xx) When you move information from the hidden self into the open self, you'are

    a)   Self - disclosing   b)   empowering

    c)   Affirming   d)   depressed

Q2) a)   Explain the need and process of Management.   **[5]**

    b)   Explain contingency theory of organizational design.   **[5]**

<div align="center">OR</div>

    a)   Explain the various levels of Management.   **[5]**

    b)   Define Henry Fayol's principles of Management.   **[5]**

Q3) a) Discuss automatic and democratic decision making style. **[5]**

b) A XYZ organization wants to expand their business in the multiple countries. Which organizational structure they have to followed and how? **[5]**

OR

a) Explain Herbert Simon Model on Decision Making. **[5]**

b) Discuss different points to enhance the relationship between organization behaviour and individual. **[5]**

Q4) a) Describe Hygiene theory by Herzberg with example. **[5]**

b) What is team building? How does it work. **[5]**

OR

a) Explain the concept as motivation and leadership. **[5]**

b) As a team manager if you want to develop your team. Describe the procedure to build effective team. **[5]**

Q5) a) Explain stages of conflict process and how it work in organization. **[5]**

b) Discuss ego states as a normal person with suitable example. **[5]**

OR

a) Describe various sources & types of stress. **[5]**

b) Explain the Johari window for transactional analysis. **[5]**

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