## VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST <br> (Autonomous \& Residential)

[Affiliated to Madurai Kamaraj University]
B.Sc. Comp. Sci. Degree (Semester) Examinations, November 2019

Part - III : Allied Subject: First Semester: Paper - I
DISCRETE MATHEMATICS
Under CBCS - Credit 4
Time: 3 Hours

## SECTION - A

## Answer ALL Ouestions :

$(10 \times 1=10)$

1. Surjective function is also called $\qquad$ .
a) onto
b) into
c) one to one
d) one one onto
2. The binary relation $\mathrm{R}=\{(0,0),(1, \mathrm{a})\}$ on $\mathrm{A}=\{0,1,2,3$,$\} is$ $\qquad$ -.
a) reflexive, not symmetric, transitive
b) not reflexive, symmetric, transitive
c) reflexive, symmetric, not transitive
d) reflexive, not symmetric, not transitive
3. If a matrix is of order $2 \times 3$, then the number of elements in the matrix is
a) 5
b) 6
c) 2
d) 3
4. If $A=\left(\begin{array}{cc}\alpha & \beta \\ \gamma & -\alpha\end{array}\right)$ is such that $\mathrm{A}^{2}=\mathrm{I}$, then
a) $1+\alpha^{2}+\beta \gamma=0$
b) $1-\alpha^{2}+\beta \gamma=0$
c) $1-\alpha 2-\beta \gamma=0$
d) $1+\alpha^{2}-\beta \gamma=0$
5. A compound proposition that is always $\qquad$ is called a tautology.
a) True
b) False
c) Either true or false
d) neither true nor false
6. Max-terms of two statements are formed by introducing the connective
a) disjunction
b) conjunction
c) negation
d) conditional
7. A $\qquad$ of integers is a function from the natural number to integers
a) Sequence
b) series
c) Function
d) none
8. $\qquad$ is an extension of mathematical induction to well-ordered sets, for example to sets of ordinal numbers or cardinal numbers.
a) Transfinite induction
b) Step Case
c) Function
d) Recursion
9. A graph that has neither self-loops nor parallel edges is called
$\qquad$ graph.
a) regular
b) simple
c) complete
d) null
10. G is strongly connected implies $\qquad$ .
a) $G$ is unilaterally connected
b) G is bilaterally connected
c) $G$ is unilaterally connected
c) $G$ has more than one component

## SECTION - B

## Answer any FIVE Questions :

$(5 \times 2=10)$
11. Let $\mathrm{f}: \mathrm{A} \rightarrow \mathrm{B}, \mathrm{g}: \mathrm{B} \rightarrow \mathrm{C}$ and $\mathrm{h}: \mathrm{C} \rightarrow \mathrm{D}$ then prove that $\left(\mathrm{h}^{\circ} g\right)^{\circ} f=h^{\circ}\left(g^{\circ} f\right)$
12.If $A=\left[\begin{array}{lll}1 & 2 & 3 \\ 0 & 4 & 5 \\ 2 & 7 & 8\end{array}\right]$ then find $|A|$.
13. If $A=\left[\begin{array}{lll}1 & 0 & 2 \\ 0 & 1 & 2 \\ 1 & 2 & 0\end{array}\right]$ and $B=\left[\begin{array}{ccc}1 & -2 & 3 \\ 2 & 3 & -1 \\ -3 & 1 & 2\end{array}\right]$ Find $A B$ and $B A$.
14. Define Tautology.
15. Write the principle of mathematical induction.
16. Define Digraph.
17. Define tree.

## SECTION - C

## Answer ALL Questions :

18. a) Let $\mathrm{If}: \mathrm{A} \rightarrow \mathrm{B}$ and $\mathrm{g}: \mathrm{B} \rightarrow \mathrm{C}$ be both one-one and onto functions then prove that $\left(g^{\circ} f\right)^{-1}=f^{-10} g^{-1}$.

## (OR)

b) Let $\mathrm{A}=\{1,2,3,4\}$ and $\mathrm{R}=\{(1,1),(1,3),(2,3),(3,4),(4,1),(4,2)\}$ find the reflexive closure of R .
19. a) Find the adjoint of the matrix $\left[\begin{array}{ccc}2 & 4 & -1 \\ 0 & 3 & 7 \\ 8 & 1 & 5\end{array}\right]$.
(OR)
b) Find the rank of the matrix. $\left[\begin{array}{llll}1 & 1 & 1 & 1 \\ 4 & 1 & 0 & 2 \\ 0 & 3 & 4 & 2\end{array}\right]$.
20.a) Construct the truth table for the formula

$$
\left.(\mathrm{P} \wedge \mathrm{Q}) \vee\left(\neg^{\mathrm{P}} \wedge \mathrm{Q}\right) \vee(\mathrm{P} \wedge\rceil \mathrm{Q}\right) \vee\left({ }_{7} \mathrm{P} \wedge{ }_{7} \mathrm{Q}\right)
$$

(OR)
b) Show that $\mathrm{Q}\left(\mathrm{P} \wedge{ }_{\eta} \mathrm{Q}\right) \vee\left({ }_{7} \mathrm{P} \wedge{ }_{\eta} \mathrm{Q}\right)$ is a tautology.
21.a) Find the recurrence relation satisfying $y_{n}=A(3)^{n}+B(-4)^{n}$.

## (OR)

b) Find the generating function of the recurrence relation

$$
\mathrm{s}(\mathrm{k})=2 \mathrm{~s}(\mathrm{k}-1), \mathrm{s}(0)=1 .
$$

22.a) Prove that in any graph, the number of odd degree is even.

## (OR)

b) Explain adjacency matrix and incidence matrix.

## SECTION - D

## Answer any THREE Questions : ( $\mathbf{3} \times \mathbf{1 0}=\mathbf{3 0})$

23. If $\mathrm{A}, \mathrm{B}$ and C are three sets then prove that $\mathrm{AU}(\mathrm{BUC})=(\mathrm{AUB}) \mathrm{UC}$.
24. Find the inverse of $A=\left[\begin{array}{ccc}8 & -1 & -3 \\ -5 & 1 & 2 \\ 10 & -1 & -4\end{array}\right]$.
25.Explain logical operators with truth table.
25. Using the generating function solve the difference equation

$$
\mathrm{y}_{\mathrm{n}+2}-\mathrm{y}_{\mathrm{n}+1}-6 \mathrm{y}_{\mathrm{n}}=0 \text { given } \mathrm{y}_{1}=1, \mathrm{y}_{0}=2
$$

27. Prove that a given connected graph G is Eulerian iff all the vertices of $G$ are of even degree.

## VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST <br> (Autonomous \& Residential)

[Affiliated to Madurai Kamaraj University]
B.Sc. Comp. Sci. Degree (Semester) Examinations, November 2019

Part - III : Allied Subject : Third Semester: Paper - I
OPERATIONS RESEARCH
Under CBCS - Credit 4
Time: $\mathbf{3}$ Hours

## SECTION - A

## Answer ALL Questions :

$(10 \times 1=10)$

1. $\qquad$ Model abstract in nature
a) iconic
b) Analogue
c) Mathematical
d) none
2. Operations research is the application of $\qquad$ methods to arrive at the optimal solutions to the problems.
a) economical
b) scientific
c) $a$ and $b$ both
d) artistic
3. Linear programming inolves more than two variables can be solved by
a) simplex method
b) Big-M method
c) both
d) graphical Method
4. The canonical form of LPP if the objective function is of maximization, then all the constraints other than non-negativity conditions are $\qquad$ _.
a) greater than type
b) lesser than type
c) greater than or equal to type
d) lesser than or equal to type
5. In the optimal simplex table $\mathrm{cj}-\mathrm{zj}=0$ value indicates
a) unbounded solution
b) cycling
c) alternative solution
d) None of these
6. In linear programming we need to ensure that both the objective function and the constraints can be expressed as linear expressions of
a) Basic variables
b) Decision variables
c) Constraints
d) Objective function
7. A transportation problem has a feasible solution when
a) all of the improvement indexes are positive
b) the number of filled cells is one less than the number of rows plus the number of columns
c) all the squares are used
d) all demand and supply constraints are satisfied
8. In transportation problem if total supply > total demand we add
a) dummy row with cost 0
b) dummy column with cost 0
c) dummy row with cost 1
d) dummy column with cost 1
9. On travelling salesman problem staring city and ending city should be $\qquad$ .
a) Same
b) not same
c) different
d) none
10. The $\qquad$ method used to obtain optimum solution of travelling salesman problem.
a) Simplex
b) Hungarian
c) dominance
d) graphical

## SECTION - B

## Answer any FIVE Questions :

$(5 \times 2=10)$
11. List any four significant features of Operations Research.
12. Name three methods for deriving the solution to an OR model.
13. Define slack variables in L.P.P.
14. Define basic feasible solution.
15. State the mathematical formulation of an assignment problem.
16. What is a balanced transportation problem?
17. Describe a transportation table.

## SECTION - C

## Answer ALL Questions :

18.a) Describe the different phases of Operations Research.
(OR)
b) Describe the scope of Operations Research.
19.a) The manager of an oil refinery must decide on the optimum mix of two possible blending processes of which the inputs and outputs production run are as follows:

| Process | Input |  | Output |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Crude A | Crude B | Gasoline X | Gasoline Y |
| 1 | 6 | 4 | 6 | 9 |
| 2 | 5 | 6 | 5 | 5 |

The maximum amounts available of crudes A and B are 250 units and 200 units respectively. Market demand shows that at least 150 units of gasoline X and 130 units of gasoline Y must be produced. The profits per production run from process 1 and process 2 are Rs. 4 and Rs. 5 respectively. Interpret the problem into a L.P.P for maximizing the profit.

## (OR)

b) Solve graphically the following L.P.P:

Maximize $\mathrm{z}=2 \mathrm{x}_{1}+4 \mathrm{x}_{2}$ subject to the constraints:
$x_{1}+2 x_{2} \leq 5, x_{1}+x_{2} \leq 4$ and $x_{1}, x_{2} \geq 0$
20.a) Solve the following problem by simplex method

Maximize $\mathrm{z}=3 \mathrm{x}_{1}+2 \mathrm{x}_{2}$ subject to the constraints:
$\mathrm{x}_{1}+\mathrm{x}_{2} \leq 4, \mathrm{x}_{1}-\mathrm{x}_{2} \leq 2$ and $\mathrm{x}_{1}, \mathrm{x}_{2} \geq 0$
(OR)
b) Solve the following problem by simplex method

Maximize $\mathrm{z}=107 \mathrm{x}_{1}+\mathrm{x}_{2}+2 \mathrm{x}_{3}$ subject to the constraints:
$14 x_{1}+x_{2}-6 x_{3}+3 x_{4}=7,16 x_{1}+x_{2}-6 x_{3} \leq 5,3 x_{1}-x_{2}-x_{3} \leq 0$ and $x_{1}, x_{2}, x_{3}, x_{4} \geq 0$
21.a) Solve the following assignment problem:

| Man | Job |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | A | B | C | D |
| I | 5 | 3 | 2 | 8 |
| II | 7 | 9 | 2 | 6 |
| III | 6 | 4 | 5 | 7 |
| IV | 5 | 7 | 7 | 8 |

b) The following is the cost matrix of assigning 4 clerks to 4 key punching jobs. Find the optimal assignment if clerk I cannot be assigned to job A:

| Clerk | Job |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | A | B | C | D |  |
| I | - | 5 | 2 | 0 |  |
| II | 4 | 7 | 5 | 6 |  |
| III | 5 | 8 | 4 | 3 |  |
| IV | 3 | 6 | 6 | 2 |  |

What is the minimum total cost?
22. a) Apply North West Corner rule to obtain an initial basic feasible solution to the following transportation problem:

|  |  |
| :---: | :---: |
| A |  |
| Requirement | B |
|  | C | | D | E | F | G |
| :---: | :---: | :---: | :---: |
| 11 | 13 | 17 | 14 |
| 16 | 18 | 14 | 10 |
| 21 | 24 | 13 | 10 |
| 200 | 225 | 275 | 250 | | Available |
| ---: |
| 250 |
| 300 |
| 400 |

(OR)
b) Apply Least Cost method to obtain an initial basic feasible solution to the following transportation problem:

|  |  | D | E | F | G | Available |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | A |  | 2 | 3 | 4 | 6 |
|  | B | 4 | 3 | 2 | 0 | 8 |
|  |  |  | 2 | 2 |  | 10 |
| Requirement |  | 4 | 6 | 8 | 6 |  |

## SECTION - D

## Answer any THREE Questions :

23. Explain the various classification schemes of models.
24. A company makes two kinds of leather belts. Belt A is a high quality belt, and belt B is of lower quality. The respective profits are Rs.4.00 and Rs. 3.00 per belt. Each belt of type A requires twice as much time as a belt of type B, and if all belts were of type B, the company could make 1000 per day. The supply of leather is sufficient for only 800 belts per day (Both A and B combined). Belt A requires a fancy buckle and only 400 per day are available. There are only 700 buckles a day available for belt B. Convert the problem into a L.P.P and solve it graphically.
25. Apply Big M method to solve the following L.P.P:

Maximize $\mathrm{z}=6 \mathrm{x}_{1}+4 \mathrm{x}_{2} \quad$ subject to the constraints:
$2 x_{1}+3 x_{2} \leq 30,3 x_{1}+2 x_{2} \leq 24, x_{1}+x_{2} \geq 3$ and $x_{1}, x_{2} \geq 0$
26. Solve the following assignment problem:

| Tasks | Men |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | E | F | G | H |
| A | 18 | 26 | 17 | 11 |
| B | 13 | 28 | 14 | 26 |
| C | 38 | 19 | 18 | 15 |
| D | 19 | 26 | 24 | 10 |

27. Solve the following transportation problem:

| From | To |  |  | Available |
| :---: | :---: | :---: | :---: | :---: |
|  | A | B | C |  |
| I | 6 | 8 | 4 | 14 |
| II | 4 | 9 | 8 | 12 |
| III | 1 | 2 | 6 | 5 |
| Requirement | 6 | 10 | 15 |  |

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## VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST <br> (Autonomous \& Residential)

[Affiliated to Madurai Kamaraj University]
B.Sc. Comp. Sci. Degree (Semester) Examinations, November 2019

Part - III : Core Subject : First Semester : Paper - I
PROGRAMMING IN C
Under CBCS - Credit 4
Time: 3 Hours

## SECTION - A

## Answer ALL Questions :

$(10 \times 1=10)$

1. Which of the following is correct variable type?
a) float
b) real
c) int
d) double
2. The declaration of C variable can be done $\qquad$ .
a) anywhere in the program
b) in declaration part
c) in executable part
d) at the end of the program
3. By default the function returns $\qquad$ _.
a) integer value
b) float value
c) char value
d) double
4. In str1+str2 means
a) Combines two string
b) add value
c) both
d) none
5. The meaning of keyword void before the function name means $\qquad$ .
a) function should not return any value
b) function should return a value
c) no arguments are passed
d) some arguments are passed
6. The bitwise AND operator is used for
a) Masking
b) Comparison
c) Division
d) Shifting bit
7. The structure combines variables of $\qquad$ .
a) similar data types
b) dissimilar data types
c) unsigned data types
d) signed data types
8. The redirection operator -> transfers any output to $\qquad$ -.
a) text file
b) console
c) binary file
d) number file
9. A function declaration must be ended with a $\qquad$ -.
a). Dot
b) ?
c) semicolon ; d) none
10. Command line arguments are used to accept argument from $\qquad$ -
a) command prompt of operating system
b) through scanf( ) statement
c) both (a) and (b)
d) through printf() statement

## SECTION - B

## Answer any FIVE Questions :

11. What is the purpose of void data type?
12. Write a C Program addition 2 Numbers using $\operatorname{Scanf}()$ and $\operatorname{Printf}()$.
13. What do you mean by Arrays?
14. What is the purpose of String Terminator?
15. List out the Important Reasons for Need of Function.
16. Define Union.
17. Define Pointers.

## SECTION - C

## Answer ALL Questions :

$(5 \times 5=25)$
18. a) Enumerate in brief Nested-if-else Statements in C Syntax with example.
(OR)
b) Elucidate briefly about do-while and for Statements in C with example.
19.a) Write briefly about Traversing or Outputting an array in C with example.

## (OR)

b) Discuss in detail Input and Output String Functions using scanf() in C with example.
20.a) Discuss about the Nesting of Functions in C with example.
(OR)
b) Write Short notes on : Recursive Function in C with example.
21.a) Discuss in detail about Initializing of Structure in C with example.

## (OR)

b) Explain Array of Structures in C.
22.a) Write about Pointers and One dimensional arrays in C with example.
(OR)
b) Write about Pointer to Pointer in C with example.

## SECTION - D

## Answer any THREE Questions :

$(3 \times 10=\mathbf{3 0})$
23. Write about the different types of Operators used in C with example.
24. Write a C program to find Matrix Addition.
25.Discuss in detail about the various Categories of Functions in C with examples.
26. Summarize in brief Call by value and Call by reference passing Structures to Functions in C with example.
27.Examine with example I/O using Formatted I/O Function in C using File Handling.
[Affiliated to Madurai Kamaraj University]
B.Sc. Comp. Sci. Degree (Semester) Examinations, November 2019

Part - III : Core Subject : First Semester: Paper - II
DIGITAL PRINCIPLES AND COMPUTER ORGANIZATION

## SECTION - A

## Answer ALL Questions :

$(10 \times 1=10)$

1. Any set of digits or alphabets are generally referred as $\qquad$
a) Characters
b) Symbols
c) Bits
d) Bytes
2. $\mathrm{A}(\mathrm{A}+\mathrm{B})=$ ?
a) AB
b) 1
c) $(1+\mathrm{AB})$
d) A
3. How many AND gates are required for a 8 to 1 multiplexer?
a) 2
b) 6
c) 4
d) 5
4. In D register, 'D' stands for
a) Delay
b) Decrement
c) Data
d) Decay
5. The computer is completely controlled by the $\qquad$
a) information
b) control unit
c) stored program
d) I/O devices
6. $\qquad$ performs this task and passes execution control back to the program
a) os
b) software
c) hardware
d) cables
7. A data transfer in which one device initiates the transfer is reffered the $\qquad$ transfer.
a) Synchronous
b) Asynchronous c) Input/Output
d) Data signal
8. The instruction set of a computer are stored in a special memory called the $\qquad$
a) Control word
b) Control unit
c) Control device
d) Control store
9. The accumulator is an 8-bit register that is part of the $\qquad$
a) ALU
b) CPU
c) Microprocessor d) None
10. Increment the contents of a register equivalent instruction
a) INR I
b) INR R
c) INC I
d) $\operatorname{INC} R$

## SECTION - B

## Answer any FIVE Questions :

$(5 \times 2=10)$
11. What is a BCD code?
12. List the difference between nibble and byte.
13. What is a Decoder?
14. Define the use of multiplexer.
15. What is a Stack?
16. Define the use of absolute node.
17. Name any two examples for eight bit microprocessor.

## SECTION - C

## Answer ALL Questions :

19.a) Explain about T and D flip flop.
(OR)
b) Discuss about the De Multiplexers.
20.a) Explain about the Languages and Translators.
(OR)
b) Discuss about the Loaders and Linkers.
21.a) Explain about the addressing modes.
(OR)
b) Discuss about the procedure for execution of a complete instruction.
22.a) Explain about 8085 instruction set.
(OR)
b) Discuss about the 8085 pin function.

## SECTION - D

## Answer any THREE Questions :

23. Explain about the Laws of Boolean Algebra.
24. Discuss about the JK flip flop.
25.Explain about the Bus Structure.
25. Explain about the Micro Programmed control.
27.Discuss about the 8085Architecture.
b) Discuss about AND gate.
B.Sc. Comp. Sci. Degree (Semester) Examinations, November 2019

Part - III : Core Subject : Third Semester : Paper - I
COMPUTER ORGANISATION WITH PARALLEL PROCESSING
Under CBCS - Credit 4
Time: 3 Hours
Max. Marks: 75

## SECTION - A

## Answer ALL Ouestions :

$(10 \times 1=10)$

1. The $\qquad$ of the computer consists of physical entity of the device.
a) software
b) middleware
c) hardware
d) firmware
2. $\qquad$ directive is used to specify and assign the memory required for the block of code.
a) Allocate
b) Assign
c) Set
d) Reserve
3. A $\qquad$ circuit is an interconnection of flip-flops and gates.
a) combinational
b) arithmetic
c) shift
d) sequential
4. The assembler stores all the names and their corresponding values in
a) Special purpose Register
b) Symbol Table
c) Value map Set
d) None of the mentioned
5. $\qquad$ is a binary code of a group of elements consisting of 10 decimal digits, the 26 letters ofthe alphabet and a certain number of special symbols such as $\$$.
a) Alphanumeric code
b) Decimal code
c) Error detection code
d) Reflected code
6. RAM is $\qquad$ its contents are destroyed when power is turned off.
a) non volatile
b) permanent
c) volatile
d) initial
7. Each stage in pipelining should be completed within $\qquad$ cycle.
a) 1
b) 2
c) 3
d) 4
8. In super-scalar processors, $\qquad$ mode of execution is used.
a) In-order
b) Post order
c) Out of order
d) None of the mentioned
9. Out of the following which is not a CISC machine?
a) IBM $370 / 168$
b) VAX 11/780
c) Intel 80486
d) Motorola A567
10. $\qquad$ method is used in centralized systems to perform out of order execution.
a) Scorecard
b) Score boarding c) Optimizing
d) Redundancy

## $\underline{\text { SECTION - B }}$

## Answer any FIVE Questions :

11. What are the functional units of a Computer?
12. What is a Bus?
13. Define stack.
14. What is Interrupt?
15. Define DMA.
16. What is parallel Processing?
17. Expand IPC.

## SECTION - C

## Answer ALL Questions :

18.a) Explain Basic operational concepts.
(OR)
b) Write a short note on Addition of positive Numbers.
19.a) Discuss about the stack operation with example.
(OR)
b) Explain Instruction formats.
20.a) Explain Asynchronous Data Transfer.
(OR)
b) Discuss about the serial communication.
21.a) Discuss about the Parallel Processing Mechanisms.
(OR)
b) Explain parallel computer structures.
22.a) Explain SIMD Interconnection Networks.
(OR)
b) Discuss about the parallel Algorithms for Multiprocessors.

## SECTION - D

## Answer any THREE Questions :

23. Explain Functional units of a computer system.
24.Discuss about the types of Addressing modes.
25.Explain DMA.
24. Explain Parallel Processing Applications.
25. Explain Inter Process Communication.

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## VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST <br> (Autonomous \& Residential)

[Affiliated to Madurai Kamaraj University]
B.Sc. Comp. Sci. Degree (Semester) Examinations, November 2019

Part - III : Core Subject : Third Semester : Paper - II
COMPUTER GRAPHICS
Under CBCS - Credit 4
ime: 3 Hours Max. Marks: 75

## SECTION - A

## Answer ALL Questions :

$(10 \times 1=10)$

1. $\qquad$ is a process of transforming an object or a person into another in image processing technology.
a) Morphing
b) Motion Capture
c) Animation
d) Surface rendering
2. $\qquad$ on random scan system depends on the number of lines to be displayed
a) Beam intensity
b) refresh rate
c) stroke writing
d) scan line
3. $\qquad$ is an accurate and efficient raster line generating algorithm
a) Bresenham's line
b) Parallel Line
c) Midpoint
d) DDA
4. A line with endpoints codes as 0000 and 0100 is $\qquad$
a) Not visible
b) completely visible
c) partially visible
d) trivially visible
5. $\qquad$ is a rigid body transformation that moves objects without deformation
a) Rotation
b) Scaling
c) Translation
d) All the above
6. The transformation that is used to alter the size of an object is $\qquad$
a) Scaling
b) rotation
c) translation
d) reflection
7. The Process of extracting a portion of a database or a picture inside or outside a specified region are called $\qquad$

## SECTION - C

a) transformation
b) Projection
c) Clipping
d) Mapping
8. In $\qquad$ mode,the input device initiate data input to the application program
a) Request
b) sample
c) event
d) loacator
9. $\qquad$ refer to the shapes created by union, intersection and difference of given shapes
a) Wireframe model
b) composite transformation
c) constructive solid geometry
d) none of these
10. Stretching out a line from a starting position on moving the screen cursor by using $\qquad$ method
a) Gravity
b) rubber band
c) dragging
d) drawing

## $\underline{\text { SECTION - B }}$

## Answer any FIVE Questions :

$(5 \times 2=10)$
11.Name the two graphics software standards developed and approved by the Standards Organization.
12. Recall any 2 areas of application of computer graphics.
13. List any 2 area fill attributes.
14. Define 'Translation' and 'Scaling'.
15. Which transformation is used to produce mirror image of an object and how?
16. What do you mean by the terms 'Window' and 'Viewport'?
17. How does Perspective Projection generate a view of a three dimensional scene?

## Answer ALL Questions :

18.a) Compare the 'Raster Scan Displays' and the 'Random Scan Displays'.
(OR)
b) Explain any 5 input devices used for providing data input to graphics applications.
19.a) Summarize the DDA line drawing algorithm.
(OR)
b) Illustrate the various line attributes.
20.a) Outline how a 2-D rotation is applied to an object.

## (OR)

b) Show how 'Shear' distorts the shape of an object.
21.a) Demonstrate the 'Sutherland Hodgeman Polygon Clipping' procedure.
(OR)
b) Interpret how the graphics input functions operate in various input modes.
22.a) Explain the concept of 'Three Dimensional Translation'.
(OR)
b) Explain the concept of 'Three Dimensional Scaling'.

## $\underline{\text { SECTION - D }}$

## Answer any THREE Questions : <br> $(3 \times 10=30)$

23. Identify the various components of refresh CRT and explain its basic operations with diagram.
24. Apply the 'Mid Point Circle' algorithm to generate a circle.
25. Apply the following composite transformations to 2-D objects.
i) Two successive Translations
(3 marks)
ii) Two successive Rotations
(3 marks)
iii) General Fixed Point Scaling
(4 marks)
26. Utilize the 'Cohen Sutherland Clipping' procedure to perform Line Clipping.
27. Identify the various three dimensional display methods.

## VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST <br> (Autonomous \& Residential)

[Affiliated to Madurai Kamaraj University]
B.Sc. Comp. Sci. Degree (Semester) Examinations, November 2019 Part - III : Core Subject : Fifth Semester: Paper - I

## SECTION - A

## Answer ALL Questions :

$(10 \times 1=10)$

1. Number of layers present in OSI protocol stack is $\qquad$ —.
a) 5
b) 6
c) 4
d) 7
2. In Frequency Division Multiple Access (FDMA), each band is reserved for a specific $\qquad$ —.
a) Signal
b) Station
c) Bandwidth
d) Data
3. $\qquad$ is the loss of energy as the signal propagates outwards, which is expressed in DB per kilometer.
a) Bandwidth
b) Data transfer rate
c) Attenuation
d) Distortion
4. When the user take turns in a round-robin fashion each one getting entire band width for a period of time periodically is called $\qquad$
a) FDM
b) TDM
c) WDM
d) DWDM
5. Which protocol the sender sends one frame and waits for an acknowledgement before sending is called $\qquad$
a) Unrestricted simplex protocol
b) simplex stop-and-wait protocol
c) Sliding protocol
d) Sliding window protocol
6. Which consequences are more likely to occur during the frame transmission in stop=and-wait ARQ mechanism?
a) Loss of frame or acknowledgement
b) delay in an acknowledgement
c) Normal operation
d) all of the above
7. Flooding is technique of the $\qquad$
a) Multicast distance vector routing
b) Unicast distance vector routing
c) Multicast link state routing
d) Unicast link state routing
8. Maximum size of TCP header is $\qquad$
a) 20 bytes
b) 40 bytes
c) 60 bytes
d) 80 bytes
9. A supporting program that is used by other programs such as e-mail is called $\qquad$
a) DNS
b) SMTP
c) IP
d) Server/Client
10. IANA Stands for $\qquad$
a) Internet Assigned Node Authority
b) Internet Assigned Native Authority
c) Internet Aligned Number Authority
d) Internet Assigned Number Authority

## SECTION - B

## Answer any FIVE Questions :

11. Write the uses of Computer Networks?
12. What is multiplexing?
13. Recall the concept of Sliding window protocol.
14. What is virtual circuit?
15. Define optimality principle.
16. What is MIME?
17. How do you make web search?

## $\underline{\text { SECTION - C }}$

## Answer ALL Questions :

18.a) Compare connection-oriented services with connectionless services.
(OR)
b) What are the different types of Networks? Explain.
19.a) Demonstrate the structure of telephone system.
(OR)
b) Compare circuit switching with packet switching.
20.a) Explain any two error correcting codes.
(OR)
b) Explain two Error detection codes.
21.a) Summarize the design issues of network layer.
(OR)
b) Explain TCP.
22.a) Explain DNS.

## (OR)

b) Explain WWW.

## SECTION - D

## Answer any THREE Questions :

$(\mathbf{3} \times \mathbf{1 0}=\mathbf{3 0})$
23. Organize OSI and TCP reference models and its design issues.
24.Identify the basic concepts behind various guided transmission medias.
25.Identify the Elementary Data Link Protocols.
26. Develop the following routing algorithms
a) Distance vector routing
b) Hierarchical routing
27. Organize the concepts of email architecture and its services.

## VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST <br> (Autonomous \& Residential)

[Affiliated to Madurai Kamaraj University]
B.Sc. Comp. Sci. Degree (Semester) Examinations, November 2019

Part - III : Core Subject : Fifth Semester : Paper - II
JAVA PROGRAMMING
Under CBCS - Credit 4
Time: $\mathbf{3}$ Hours
Max. Marks: 75

## SECTION - A

## Answer ALL Questions :

$(10 \times 1=10)$

1. Which of these keywords is used to make a class?
a) class
b) struct
c) int
d) array
2. The $\qquad$ statement is used to terminate a statement sequence.
a) break
b) switch
c) continue
d) wait
3. What is the return type of Constructors?
a) int
b) float
c) void
d) None of the mentioned
4. A method without the body is called $\qquad$ method.
a) view
b) class
c) abstract
d) user defined
5. Which of these access specifiers can be used for an interface?
a) public
b) protected
c) private
d) All of the mentioned
6. A package is a collection of $\qquad$ -.
a) keywords
b) classes and interfaces
c) editing tools
d) views
7. In java thread to thread communication is called $\qquad$ _.
a) passing
b) sending
c) messaging
d) calling
8. $\qquad$ method must be implemented by all threads.
a) run() method
b) call() method
c) $\operatorname{super}()$ method
d) none of the above
9. When we invoke repaint() for a JAVA.awt.Component object, the AWT invokes the method $\qquad$ .
a) update()
b) $\operatorname{draw}()$
c) $\operatorname{show}()$
d) paint()
10. What class is in the top of the AWT event hierarchy?
a) iostream class
b) java.awt.AWTEvent class
c) io.awt.AWTEvent class
d) java.Event class

## $\underline{\text { SECTION - B }}$

## Answer any FIVE Questions :

$(5 \times 2=10)$
11. What is JVM?
12. What is automatic type conversion?
13. What is a static keyword?
14. What is an abstract keyword?
15. Compare Method overloading with Method overriding.
16. What is synchronization?
17. Define Throw.

## SECTION - C

## Answer ALL Questions :

$(5 \times 5=25)$
18.a) Explain any two iteration statements in java with example.
b) Explain with examples how one dimensional arrays are declared and accessed in java.
19.a) What is constructor? What are its special properties?
(OR)
b) Write short notes on nested classes.
20.a) Explain super and final keyword with example.
(OR)
b) When do we declare a method or class abstract?

Discuss with one Example.
21.a) What is an Exception? Explain how we define try, catch block.
(OR)
b) Explain the following Thread methods: i) Sleep ii) Suspend
22.a) Discuss about PrintWriter Class with example.

## (OR)

b) Discuss about Native method with example.

## SECTION - D

## Answer any THREE Questions :

$(3 \times 10=30)$
23. List out the decision making statements available in Java. Explain with example.
24. i) Define Class. How do classes help us to organize our programs?
ii) Explain how classes are declared and accessed.
25. What is Package? How do we add a class or an interface to a package? Explain it with Examples.
26. Write a java program to find factorial of a given number and generate Fibonacci series by implementing multithreading.
27.Explain with example, how client can communicate with the server using sockets?

## VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST <br> (Autonomous \& Residential)

[Affiliated to Madurai Kamaraj University]
B.Sc. Comp. Sci. Degree (Semester) Examinations, November 2019 Part - III : Elective Subject : Fifth Semester : Paper - I

## SOFTWARE ENGINEERING

Under CBCS - Credit 5
Time: 3 Hours
Max. Marks: 75

## SECTION - A

## Answer ALL Questions :

$(10 \times 1=10)$

1. Software can be defined as $\qquad$ _.
a) instructions
b) data structures
c) documents
d) all of the above
2. Which forms the basis for management control of software project?
a) Methods
b) Tools
c) Process
d) Quality focus
3. Transformations are represented by $\qquad$ .
a) circle
b) triangle
c) arrows
d) line
4. $\qquad$ factor in design is assessed by human factors.
a) Usability
b) Reliability
c) Performance d) Supportability
5. The $\qquad$ translates data objects into data structures at component level.
a) analysis
b) design
c) architecture
d) code
6. In $\qquad$ model, plan and modeling is quick.
a) RAD
b) prototyping
c) spiral
d) incremental
7. Black box testing responds to tests conducted at software $\qquad$ -.
a) interface
b) component
c) module
d) independent paths
8. The relationship in bidirectional link applies in $\qquad$ directions.
a) one
b) both
c) tri
d) four
9. In unit testing, $\qquad$ paths are tested to uncover errors within the boundary of the module.
a) independent
b) control
c) network
d) graph
10. Validation testing begins at the culmination of $\qquad$ testing.
a) data flow testing
b) condition testing
c) loop testing
d) validation testing

## SECTION - B

Answer any FIVE Questions : $\quad(5 \times 2=10)$
11.What is meant by software and software engineering?
12. List any four types of softwares.
13. Define project cost estimation.
14. Define quality control and quality assurance.
15. State the phases of software quality assurance.

16 . What is verification?
17. Define Debugging.

## SECTION - C

## Answer ALL Questions :

18.a) Describe the size factors in software engineering.
(OR)
b) Explain the concept of project structure.
19. a) Describe about software cost estimation techniques.
(OR)
b) Discuss about staffing level estimation.
20.a) Explain the format of software requirement specifications.
(OR)
b) Illustrate the relational notations for format specification techniques.
21.a) Write about the guidelines for software design.
(OR)
b) Describe the term coupling and cohesion.
22.a) Discuss about the four types of tests.
(OR)
b) Explain source code metrics.

## SECTION - D

## Answer any THREE Questions :

$(3 \times 10=30)$
23. Explain about planning the development process.
24.Explain about software cost factors.
25. Explain about Languages and processor for requirement specification.
26. Explain the concept of design notation for software design.
27. Discuss about unit testing and debugging.

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[Affiliated to Madurai Kamaraj University]
B.A. / B.Sc. Degree (Semester) Examinations, November 2019 Part - IV : Non-Major Elective Subject : First Semester : Paper - I

INTRODUCTION TO INFORMATION TECHNOLOGY
Under CBCS - Credit 2

## SECTION - A

## Answer ALL Questions :

$(10 \times 1=10)$

1. Information is
a) a collection of data
b) a processed data
c) a text data
d) an audio/video data
2. WWW means
a) World Wide Wan
b) World Wide Web
c) World Wan Web
d) World van Web
3. Website is a collection of
a) audio files
b) video file
c) image file
d) html file
4. WAN stands for
a) wire and network
b) wire accessible network
c) widely accessible network
d) wide area network
5. DOM is an acronym for $\qquad$ _.
a) document object model
b) document object metrics
c) digital object model
d) digital object metrics
6. WWW uses the following protocol?
a) http
b) ftp
c) www
d) SMTP
7. A source program is written in
a) high level language
b) English language
c) machine language
d) symbolic language
8. Computer performs calculations
a) in accurately
b) accurately
c) 1 million decimals
d) 2 decimals
9. The actual machinery in a computer is called the
a) machinery
b) hardware
c) software
d) instruments
10. First generation computers uses
a) cathode ray tube
b) typewriter
c) printers
d) paper tapes

## SECTION - B

## Answer any FIVE Questions : <br> $(5 \times 2=10)$

11. Expand HDD and USB.
12. Expand TCP and IP.
13. List out the any two web browsers?
14. What is peripherals?
15. What is CPU?
16. Define internet.
17. Type of memory in computer.

## SECTION - C

## Answer ALL Questions :

18.a) Briefly discuss about the input device and output device.
(OR)
b) Explain the followings
i) Web page
ii) website
iii) browser
19.a) Explain about the computer with types.
(OR)
b) Briefly explain about computer network with types.
20.a) Explain about the memory with types.
(OR)
b) Discuss briefly about storage media in a computer system?

## SECTION - D

## Answer any TWO Questions :

21.Explain the different types of operating system?
22.Discuss briefly about the keyboard descriptions in a computer system?
23. Explain the usage of IT in Different fields.
24. Explain the functional unit in a computer.
(Autonomous \& Residential)
[Affiliated to Madurai Kamaraj University]
B.Sc. Comp. Sci. Degree (Semester) Examinations, November 2019 Part - IV : Skill Based Subject : Third Semester : Paper - I

## OPERATING SYSTEM

Under CBCS - Credit 2

## SECTION - A

## Answer ALL Questions :

$(10 \times 1=10)$

1. Instruction and data are stored in $\qquad$ .
a) Main Storage
b) Memory
c) Core Memoryd) All of these 2. $\qquad$ Process some waiting for event.
a) Run
b) Wait
c) Ready
d) Execute
2. Main memory is divided into separate $\qquad$ —.
a) Memory Regions
b) Memory Partitions
c) Memory Devices
d) Both $a \& b$
3. A $\qquad$ can be defined as a logical grouping of information.
a) Segment
b) Paged segment
c) Demand paged segment
d) None
4. The process scheduleris also called the $\qquad$ _.
a) Scheduler
b) Dispatcher
c) Processor
d) Controller
5. Page interrupt condition is also called the $\qquad$ _.
a) Page interrupt
b) Page defaults
c) Exception
d) Demand page
6. UCB expand for $\qquad$ .
a) Unit Control Block
b)Unix cell Block
c) Uniform Control Block
d) None
7. Arm position is called as a $\qquad$ _.
a) Cylinder
b) Disk
c) Tape
d) Record
8. Information management sometimes referred to the $\qquad$ ..
a) OS
b) Database
c) File system
d) Contemporary System
9. The $\qquad$ system is concerned with mapping the structure.
a) Symbolic fine b)
b) Physical file
c) Basic file
d) Logical file

## $\underline{\text { SECTION - B }}$

## Answer any FIVE Questions :

11. What is OS?
12. Differents between software and hardware?
13. Define Multiprogramming?
14. What is a memory management?
15. Write a multiprocessor system?
16. Define a storage device? \& Example?
17. Define a file system?

## SECTION - C

## Answer ALL Questions :

18.a) What is os, types, function and importance for OS. (OR)
b) Write a short notes on os resource Manager.
19. a) Write a short notes an Single contigious allocation. (OR)
b) Explain about the State model.
20.a) Explain the device management system.
b) Explain the simple file system.

## SECTION - D

## Answer any TWO Questions:

$(2 \times 14=28)$
21. Basic concept and terminology for OS.
22. Discuss about the job scheduling algorithm.
23. Write a short notes an channels and control units.
24.Explain about the logical file system.
B.Sc. Comp. Sci. Degree (Semester) Examinations, November 2019 Part - IV : Skill Based Subject : Fifth Semester : Paper - I

## COMPETITIVE EXAMINATION FOR IT

Under CBCS - Credit 2
Max. Marks: 75

## SECTION - A

## Answer ALL Questions :

$(75 \times 1=75)$

1. The L.C.M of number is $2,4,32,8$ find the value
a) 32
b) 65
c) 60
d) 63
2. The L.C.M of two number is $2,13=$ ?
a) 15
b) 25
c) 26
d) 28
3. $\frac{(489+375)^{2}-(489-375)^{2}}{(489 \times 375)}=$ ?
a) 4
b) 5
c) 40
d) 52
4. If $\times$ stands for 'addition', $\div$ stands for 'subtraction', + stands for 'multiplication' and-stands for 'division', then $20 \times 8 \div 8-4+2=$ ?
a) 80
b) 25
c) 24
d) 19
5. One digit number some times called
a) Oncs
b) Units
c) Single Digit
d) Number
6. 637849 this is a number Face value $(8)=$ ?
a) 800
b) 80
c) 8
d) 88
7. ba $\qquad$ b _ aab $\qquad$ a_b
a) acbc
b) acba
c) baba
d) abba
8. $\mathrm{CB}=5, \mathrm{DISCH}=43$ NEVER $=$ ?
a) 64
b) 65
c) 14
d) 48
9. The Octal number 23 convert to binary number is
a) 111110
b) 110011
c) 010011
d) 110001

10 . The Octal number 34.52 convert to binary number is
a) 011100.100
b) 011100.101010
c) 011100.001011
d) 011100.011110
11. Computers use the $\qquad$ language to process data.
a) Relational
b) megabyte
c) binary
d) Processing
12. The $3^{\text {rd }}$ generation computers manufactured by
a) vacuum tubes
b) transistors
c) micro processor
d) IC
13. A man walks 5 km East, turns left \& walks another 5 km . Again he takes a left turn \& walks 5 km . Which direction on is he facing now?
a) West
b) East
c) South
d) North
14. Given interchanges: Signs + and - , numbers 4 and 8 .
a) $4+8-12=12$
b) $4-8+12=0$
c) $8+4-12=2$
d) $8-4+12=8$
$15.77 \%$ of $64=$ ?
a) 47.28
b) 49.28
c) 48.29
d) 49.27
16. The L.C.M of two number is $12,30=$ ?
a) 58
b) 60
c) 62
d) 64
17. The L.C.M of two number is $30,42=$ ?
a) 630
b) 635
c) 220
d) 210
18. $\frac{(963+476)^{2}-(963-476)^{2}}{(963 \times 476)}=$ ?
a) 4
b) 5
c) 6
d) 2
19.If Q means 'add to', J means 'multiply by', T means 'substract from' and K means 'divide by' then 30 K 2 Q 3 J 6 T $5=$ ?
a) 28
b) 18
c) 31
d) 103
20.637849 this is a number Place value ( 3 ) = ?
a) 30000
b) 3000
c) 300
d) 3000000
$21.2,5,10,17,26, ? ?, 50, ? ?$
a) 36,65
b) 36,63
c) 37,66
d) 37,65
22. HEART $=@ 8531 ;$ FEAST $=\# 8541 ;$ FARTHEST $=$ ?
a) \#541@831
b) @ $041 \# 831$
c) \#831@541
d) \#531@841
23. NOTION - LMRGML; VECTOR = ?
a) VEGXIL
b) VEXGLI
c) EVTCRO
d) EVROTC
24. The Binary number 011101111 convert to octal number is
a) 357
b) 356
c) 355
d) 354

25 . The binary number 10001100 convert to hexa number is
a) 812
b) 8 A
c) 8 B
d) 8 C
26. Arranging of data in a logical sequence called is
a) Sorting
b) classifying
c) reporting
d) summarising
27.A text is entered, using word processor by means of a $\qquad$ _.
a) keyboard
b) disk
c) file
d) Printer
28.Home D is 10 km , towards the North of House A. Home C is 15 km towards the west of Home D. Home B is 15 km towards the west of Home A. How far and in which direction is Home B from Home C ?
a) East
b) West
c) North
d) South
29. Find out the two signs to be interchanged for making following equation correct $5+3 \times 8-12 / 4=3$
a) + and -
b) + and /
c) + and $x$
d) - and /
a) 256
b) 252
c) 305
d) 352
31.The L.C.M of Three number is $4,16,32=$ ?
a) 64
b) 60
c) 32
d) 30
32. The L.C.M of two variable is $x^{3} y^{2} z^{2}, x y z=$ ?
a) $x y^{2} z$
b) $x^{3} y^{2} z$
c) $x^{3} y^{2}$
d) $x^{3} y z$
33.7:12 is equivalent to
a) $28: 40$
b) $42: 71$
c) $42: 72$
d) $72: 42$
34. If $\times$ means $\div$, means $\times, \div$ means + and + means- than (3-15 $\div 19$ ) $\times 8+6=$ ?
a) 8
b) 4
c) 10
d) 2
35.9587-? $=7429-4358$
a) 6516
b) 6563
c) 6662
d) 6514
36. look this series : 7, 10, 8, 11, $9,12 \ldots$ what number should come next?
a) 7
b) 10
c) 12
d) 13
37. A/2, B/4, C/6, D/8 .?,?
a) $\mathrm{E} / 8, \mathrm{~F} / 10$
b) $\mathrm{E} / 12, \mathrm{~F} / 14$
c) $\mathrm{E} / 10, \mathrm{~F} / 12$
d)D/10, E/10
38. If ACTION is coded as ZXGRLM, then HEALTH will be coded as
a) SVZOGS
b) TVZOGT
c) RUZPGR
d) QVGOZQ
39. The hexa number 9AFconvert to binary number is
a) 100110101111
b) 100111101101
c) 100010001011
d) 100100111100
40. The hexa number 3 E 2 convert to binary number is
a) 100110101111
b) 100110111110
c) 101111101010
d) 001111100010
41. What protocols used between E-Mail servers $\qquad$ .
a) FTP
b) SMTP
c) SNMP
d) P 0 P 3
42. Where is RAM located?
a) Expansion Board
b) External Drive
c) MotherBorad
d) None
43.Ram is the brother of Arun. Sana is the sister of Tina. Arun is the son of Sana. How is Ram related to Sana?
a) Brother
b) Uncle
c) Son
d) Father
44. Select the correct set of symbols which will fit in the given equation? $5035=20$
a) $x, x, x$
b),,$-+ x$
c) $x,+, x$
d),,+- x
$45.5 \%$ of $5 \%$ of Rs. 100 is
a) Rs. 25
b) Rs. 0.50
c) Rs. 10
d) Rs. 0.25
46.The L.C.M of Three number is $26,26,26=$ ?
a) 64
b) 26
c) 32
d) 30
47.The L.C.M of two variable is $3 x^{2} y z, 4 x^{3} y^{2} z=$ ?
a) $34 x^{2} z x^{3} z$
b) $3 x^{2} y 4 x^{3} y^{2}$
c) $7 x^{3} y y^{2} z$
d) $12 x^{3} y^{2} z$
48. A ratio equivalent to $3: 7$ is
a) $9: 21$
b) $6: 10$
c) $3: 9$
d) $18: 49$
49.If 'blue' means 'green', 'green' means 'white', 'white' means 'yellow', 'yellow' means 'black', 'black' means 'red' and 'red' means 'brown', that what is colour of 'Board'?
a) Yellow
b) Green
c) Red
d) Black
50.Find the missing number in the following series? $3,5,5,19,7,41,9$, ?
a) 91
b) 61
c) 79
d) 71
51. What should come in place of question mark (?) in the following number series? $132 \quad 156 \quad$ ? $210 \quad 240 \quad 272$
a) 196
b) 182
c) 199
d) 204
52. Look at this series: V, VIII, XI, XIV, $\qquad$ , XX,... What number should fill the blank?
a) IX
b) XXIII
c) XV
d) XVII
53. In a certain code language, WINDOW is coded as 452364 , SHADE as 17839 . Then HIDDEN is coded as?
a) 763392
b) 753392
c) 765595
d) 756696
54. The Multiplication of two number is $117 \times 113=$ ?
a) 12321
b) 12231
c) 13221
d) 13220
55. The Multiplication of two number is $69 \times 61=$ ?
a) 4207
b) 4201
c) 4205
d) 4209
56. We can draw a pie-graph in a $\qquad$ .
a) Excel
b) Power point
c) Access
d) Word
57. M-S word is an example of $\qquad$ _.
a) System $\mathrm{S} / \mathrm{W}$
b) Application $\mathrm{S} / \mathrm{W}$
c) OS
d) Translating program
58. Pointing towards a day, Veena said, "He is the son of the only son of my Grandfather." How is that boy related to Veena?
a) Uncle
b) Brother
c) Cousin
d) None
59. Givenintercharges: Signs + and $x$ and numbers 4 and 5
a) $5 \times 4+20=40$
b) $5 \times 4+20=85$
c) $5 \times 4+20=104$
d) $5 \times 4+20=95$
60. $2 \sqrt{1225}=$ ?
a) 35
b) 30
c) 45
d) 25
61.The L.C.M of Three variable is $\mathrm{a}^{2} \mathrm{bc}, \mathrm{ab}^{2} \mathrm{c}, \mathrm{abc}^{2}=$ ?
a) $a^{2} b c a b^{2} c a b c^{2}$
b) $a^{2} a b^{2} b c^{2} c$
c) $a^{2} b^{2} c^{2}$
d) $a a^{2} b b^{2} c c^{2}$
62.The L.C.M of Three variable is $\mathrm{a}^{\mathrm{m}+1}, \mathrm{a}^{\mathrm{m}+2}, \mathrm{a}^{\mathrm{m}+4}=$ ?
a) $a^{m+4}$
b) $\mathrm{a}^{\mathrm{m}+2}$
c) $\mathrm{a}^{\mathrm{m}+1}$
d) $a^{m+2} a^{m+4}$
63.In a class there are 20 boys \& 15 girls. The ratio of boys to girls are
a) $4: 3$
b) $4: 5$
c) $3: 9$
d) $18: 49$
64.If 'blue' means 'green', 'green' means 'white', 'white' means 'yellow', 'yellow' means 'black', 'black' means 'red' and 'red' means 'brown', that what is colour of 'panana'?
a) Yellow
b) Green
c) Brown
d) Black
65.Look at this series: $201,202,204,207, \ldots$ What number should come next?
a) 205
b) 208
c) 210
d) 211
66.Look at this series: $3,4,7,8,11,12, \ldots$ What number should come next?
a) 7
b) 10
c) 15
d) 14
67.If ACTION is coded as ZXGRLM, then HEALTH will be coded as
a) SVZOGS
b) TVZOGT
c) RUZPGR
d) QVGOZQ
68. If $\mathrm{C}=3$ and POLISH $=79$, then POINTER $=$ ?
a) 98
b) 97
c) 96
d) 95
69. Arrange the words given below in a meaningful sequence.
I. Key II.Door III.Lock IV.Room V.Switch on
a) 5, 1, 2, 4, 3
b) $4,3,2,5,4$
c) $1,3,2,4,5$
d) $3,5,1,2,4$
70. Arrange the words given below in a meaningful sequence.
I.Word II. Essay III. Sentence IV. Paragraph V. Letter
a) $3,1,5,2,4$
b) $5,1,3,4,2$
c) $1,2,5,3,4$
d) $3,5,1,2,4$
71. Data in a computer can be represented as $\qquad$ $\ldots$.
a) Hexa Decimal b) Decimal
c) Binary
d) All of these
72. The Hexadecimal number system cinsists of the $\qquad$ -.
a) $0-15$
b) $0-9, \mathrm{~A}-\mathrm{E}$
c) $0-7, \mathrm{~A}-\mathrm{F}$
d) $0-9, \mathrm{~A}-\mathrm{F}$
73.Docter::Patient::Teacher::?
a) Principal
b) Hod
c) Student
d) All of these
74. What is $7+7 \div 7+7 \times 7-7=$ ?
a) 50
b) 42
c) 0
d) 57
75. $2 \sqrt{9025}=$ ?
a) 85
b) 75
c) 95
d) 90

