

Instructions:

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

SECTION I

Answer the below given MCQs:

(35)

- 1) If 's' is a non-static variable referring to a class which has an integer variable 'x', then the correct way to access it.
  - a) x.
  - b) s->x.
  - c) s.x.
  - d) s::x.
- 2) STL refers to.
  - a) Static Temporary Linguistics.
  - b) Standard Template Library.
  - c) Static Template Language.
  - d) Standard Template Language.
- 3) Which one of these is not a keyword in C+.
  - a) integer.
  - b) switch.
  - c) default.
  - d) continue.
- 4) Which of these is a valid identifier in C++.
  - a) \_abc.
  - b) 1\_abc.
  - c) abc@1.
  - d) abc 1.
- 5) The size of the 'char' data type in C++ is.
  - a) 1 byte.
  - b) 2 byte.
  - c) 3 byte.
  - d) Dependent on the implementation.
- 6) A pure virtual function is declared as.
  - a) virtual void display();
  - b) virtual void display() = 0;.
  - c) virtual void display(){}.
  - d) virtual void display(){ return 0;}.
- 7) The result of ~~9&6~~<sup>9&6</sup> in C++ is.
  - a) 9.
  - b) 6.
  - c) 0.
  - d) 1.
- 8) If x = 10, y = 12, then the z = (x>y) ? x : y will assign z the value.
  - a) 10.
  - b) 12.
  - c) 0.
  - d) 1.
- 9) In C++ "for (; ;)" will.
  - a) give runtime error.
  - b) give a compile time error.
  - c) will print ";".
  - d) none of the given options.
- 10) The correct way of declaring an array in C++ is.
  - a) int[] a = {1,2};
  - b) int[] a[] = {1,2};
  - c) int a[] = {1,2};
  - d) int a = {1,2};

11) A friend function.

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

12) Example of a parameterized constructor for a class 'Circle' is.

- a) `~Circle(){....}`.
- b) `Circle(){....};`.
- c) `circle(circle c){....}`.
- d) `Circle(Circle c){....}`.

13) The destructor for a class 'Circle' is.

- a) `~Circle(){....}`.
- b) `Circle(){....}`.
- c) `circle(circle c){....}`.
- d) `Circle(Circle c){....}`.

14) To get the length of a string contained in the string variable s use.

- a) `s.len`.
- b) `s.size`.
- c) `s.len()`.
- d) `s.size()`.

15) `cin` in C++ is.

- a) a data type.
- b) a class.
- c) an operator.
- d) an object.

16) The correct syntax for overloading '+' for a class A, where the addition returns an object of the same type is.

- a) `A operator+(const A& a)`.
- b) `int operator+(const A& a)`.
- c) `void operator+(A& a)`.
- d) `void operator+(A a)`.

17) The integral datatype in C++ can be a.

- a) boolean.
- b) octal.
- c) floating.
- d) character.

18) The keyword 'long' cannot be used to qualify.

- a) `int`.
- b) `double`.
- c) `long int`.
- d) `float`.

19) If `int x = 3; int y = 2;` then `x > y` will return.

- a) 1.
- b) 2.
- c) 3.
- d) true.

20) If `int a=100; int b=7; double z = a/b;` then the value of z is.

- a) 14.2857
- b) 14.286
- c) 14.3
- d) 14

21) If `int x = 50; x--;` now the value of x is.

- a) 50.
- b) 49.
- c) 48.
- d) cannot be determined.

22) If 'ptr' is a pointer pointing to an object, then the correct way of referring to an instance variable 'x' of the class of that object is.

- a) `ptr.x`
- b) `ptr>x`
- c) `(&ptr).x`
- d) `&ptr.x`

23) The destructor is called when.

- a) the program terminates.

- b) when the function terminates.  
 c) when the object goes out of scope.  
 d) when we shut down the computer.
- 24) A template function to return the product of its two parameters is.  
 a) `template <typename T> mul(T x, T y){.....}`.  
 b) `template <typename T>T mul(T x, T y){.....}`.  
 c) `template <T> mul(T x, T y){.....}`.  
 d) `<typename T>T mul(T x, T y){.....}`.
- 25) Which of these is a manipulator.  
 a) `goto`.  
 b) `jump`.  
 c) `endl`.  
 d) `continue`.
- 26) The operator used to allocate memory in C++ is.  
 a) `allocate`.  
 b) `malloc`.  
 c) `calloc`.  
 d) `new`.
- 27) To access a static variable 's' of the class S whose object is 'ss' is.  
 a) `ss.s`.  
 b) `S.s`.  
 c) `S::s`.  
 d) `S::ss.s`.
- 28) Which inheritance is not supported by C++.  
 a) Multilevel.  
 b) Multiple.  
 c) Hybrid.  
 d) None of the given options.
- 29) Which keyword cannot be used for a static variable.  
 a) `private`.  
 b) `public`.  
 c) `this`.  
 d) None of the given options.
- 30) Which of these operators cannot be overloaded in C++.  
 a) `++`.  
 b) `()`.  
 c) `::`.  
 d) `==`.
- 31) Which of the ones given will have the same output as the following : `for(i = 0; i < 0; ++i){ cout<<"C++";}`.  
 a) `i = 0; while(i < 0){ cout<<"C++";}`.  
 b) `i = 0; do{ cout<<"C++";}while(i < 0);`.  
 c) `i = -1; do{ cout<<"C++";}while(i < 0);`.  
 d) `i = 0; do{ ++i; cout<<"C++";}while(i < 0)`
- 32) Exception handling mechanism is implemented in C++ with the help of the following keyword.  
 a) `try, catch, throw`.  
 b) `try, catch, throwin`.  
 c) `try, catch, throws`.  
 d) None of the given options.
- 33) If `int j = 5/2;` then the output of `cout<<i++;` is.  
 a) 3.5.  
 b) 2.5.  
 c) 3.  
 d) 2.
- 34) The creator of C++ programming language is.  
 a) Denis Ritchie.  
 b) Bill Gate.  
 c) Bjarne Stroustrup.  
 d) Alan Turing.
- 35) If `int x = 1; int y = 0;` then the output of `while(y) {cout<<x;}` - is.  
 a) 1.  
 b) 0.  
 c) 10.  
 d) None of the given options.

## SECTION II

- Q1) Attempt any one: (05)  
A) Explain the advantages of Object Oriented Programming.  
B) Explain the principles of OOP.
- Q2) Attempt any one: (05)  
A) What is a constructor? How many types of constructors are there in C++? Give examples.  
B) What is a destructor? Explain with an example.
- Q3) Attempt any one: (05)  
A) Explain method overloading in C++.  
B) How do you overload a binary operator? Give example.
- Q4) Attempt any one: (05)  
A) Explain polymorphism in C++ with an example.  
B) Explain various kinds of inheritance in C++.
- Q5) Attempt any one: (05)  
A) Explain with example template functions.  
B) Explain the various file modes in C++.
- Q6) Attempt any three: (15)  
A) Write a program in C++ to create a class to represent a rectangle. Define appropriate constructor and member function to return the area of the rectangle. Write a driver program for it.  
B) Write a program in C++ to create a class to represent a cylinder. Define appropriate constructor and member function to return the volume of the cylinder. Write a driver program for it.  
C) Write a program in C++ to create a class to represent a Complex number. Define appropriate constructor. Overload the '\*' operator for Complex objects. Write a driver program for it.  
D) Write a program in C++ to create a class to represent a Fraction number. Define appropriate constructor. Overload the '/' operator for Complex objects. Write a driver program for it..  
E) Write a program in C++ to create a class to represent a vector having i, j, k components. Define appropriate constructor. Overload the "<<" operator for vector objects to display the vector in the standard form. Write a driver program for it.

Max Time: 2½ hrs

FY-BSc. IT sem-II

Max Marks: 75

Instructions:

MICROPROCESSOR Architecture

25/4/2022

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

SECTION I

Answer the below given MCQs:

(35)

- 1) Which register is indicating the address of the next instruction to be executed?
  - a) Accumulator
  - b) Program counter
  - c) Stack Pointer
  - d) Flag register
- 2) How the 8085 will recognize the work to be done after receiving the op-code?
  - a) through PC
  - b) through an interrupt
  - c) through Instruction register
  - d) through control signals
- 3) Which is the selection signal for address/data bus (AD7-AD0) in 8085?
  - a) IO / M (bar)
  - b) HOLD
  - c) ALE
  - d) INTR
- 4) Microprocessor is \_\_\_\_\_ bit & \_\_\_\_\_ byte processor
  - a) 8 & 8
  - b) 16 & 1
  - c) 8 & 1
  - d) 16 & 16
- 5) 8085 has \_\_\_\_\_ pins and \_\_\_\_\_ frequency as operating frequency.
  - a) 20 & 3MHz
  - b) 40 & 6MHz
  - c) 40 & 3 MHz
  - d) 20 & 6 MHz
- 6) Which interrupt is non-maskable interrupt in 8085?
  - a) INTR
  - b) TRAP
  - c) RST 7.5
  - d) RST 7.5
- 7) Stack memory is having \_\_\_\_\_ structure
  - a) LIFO
  - b) FIFO
  - c) FILO
  - d) LILO
- 8) How to enable / disable the interrupts?
  - a) use SIM/RIM instruction
  - b) use EI/DI instruction
  - c) use priority guidelines
  - d) can delete ISR
- 9) To move data from device to 8085, user have to execute \_\_\_\_\_ instruction
  - a) LDA (or) IN
  - b) STA (or) IN
  - c) STA (or) OUT
  - d) LDA (or) OUT
- 10) Total number of devices can be connected with 8085 in IO mapped IO logic?
  - a) 255
  - b) 257
  - c) 127
  - d) 128
- 11) Name the machine cycles required to execute this instruction: "MVI A, 64"
  - a) Memory read MC & Op-code fetch MC
  - b) Op-code fetch MC & Memory write MC
  - c) Memory write MC & Op-code fetch MC
  - d) Op-code fetch MC & Memory read MC
- 12) In 8085, which of the following modifies the program counter ?
  - a) Only PCHL instruction
  - b) Only ADD instructions
  - c) Only JMP and CALL instructions
  - d) All instructions
  - e)

- 13) Following is a 16-bit register for 8085 microprocessor
- Stack pointer
  - Accumulator
  - Register B
  - Register C
- 14) Microprocessor 8085 have address line
- 8 bit
  - 9 bit
  - 15 bit
  - 16
- 15) The instruction, MOV AX, 0005H belongs to the address mode
- Register
  - Indirect
  - direct
  - register relative
- 16) The instruction that enables subtraction with borrow is
- DEC
  - SUB
  - SBU
  - SBB
- 17) The addressing mode used in an instruction of the form ADD X, Y, is
- immediate
  - indirect
  - Relative.
  - absolute.
- 18) Both the arithmetic logic unit (ALU) and control section of CPU employ special purpose storage locations called
- Decoders.
  - Buffers
  - Multiplexer
  - Registers
- 19) A device employing INTA line for device interrupt puts the CALL instruction on the data bus while
- HOLD is inactive.
  - READY is active
  - RD active
  - INTA is active
- 20) When the HLT instruction of a 8085 microprocessor is executed, the microprocessor
- Is disconnected from the system bus till the reset is pressed
  - Halts execution of the program and returns to monitor
  - Reloads the program form the locations 0012 and 0013 H.
  - Enters into a halt state and the buses are tri- stated
- 21) The addressing mode used in the instruction PUSH B is
- Direct
  - Index
  - Indirect
  - Register
- 22) Micro program is
- The name of source program in micro Computers
  - Primitive form of macros used in Assembly language programming
  - Program of very small size
  - The set of instructions indicating the primitive operations in a system
- 23) An instruction used to set the carry flag in a computer can be classified as
- Data transfer
  - Logical
  - Arithmetic
  - Process control
- 24) Number of machine cycles required for RET instruction in 8085 microprocessor is
- 1
  - 2
  - 4
  - 3
- 25) If a number of instructions are repeating through the main program, then to reduce the length of the program, \_\_\_\_\_ is used.
- Program
  - Routine
  - Macro
  - sub-routine
- 26) In 8085 how many interrupts are maskable?
- 1
  - 2
  - 4
  - 5

- 27) Microprocessor 8085 have address line
- a) 8 bit
  - b) 9 bit
  - c) 15 bit
  - d) 16
- 28) The field which is never present in an assembly language statement, is
- a) Continue
  - b) Opcode
  - c) Operand
  - d) Comment
- 29) Following is a 16-bit register for 8085 microprocessor
- a) Stack pointer
  - b) Accumulator
  - c) Register B
  - d) Register C
- 30) a set of program written for a microprocessor based system is called as
- a) software
  - b) coding
  - c) machine code
  - d) soft
- 31) arithmetic and logic instruction executes by
- a) ALU
  - b) Decoder
  - c) Timing Unit
  - d) PC
- 32) In a processor address line represents
- a) Total memory locations
  - b) Half of Total memory locations
  - c) First Location
  - d) Last Location
- 33) Which one is not a non vector interrupt
- a) INTR
  - b) RST 6.5
  - c) RST 7.5
  - d) RST 5.5
- 34) What is meant by Maskable interrupts?
- a) An interrupt that can be turned off by the programmer.
  - b) An interrupt which can never be turned off.
  - c) An interrupt which is in service
  - d) An interrupt that can be turned On
- 35) What is SIM?
- a) Set Interrupt Mask
  - b) Select Interrupt Mask
  - c) Card
  - d) RST 5.5

## SECTION II

- Q1) Attempt any one: (5)
- A) How does a Microprocessor Work?
  - B) Explain 1. Source Code and 2. Object Code
- Q2) Attempt any one: (5)
- A) A data FF H is stored at a memory location C050 H. write three different ways of moving this data segment to the accumulator.
  - B) List different addressing modes used by 8085 microprocessor. Write any one 1 byte and any one 2 byte instruction to perform arithmetic operation using 8085 microprocessor.
- Q3) Attempt any one: (5)
- A) What is stack? Explain the use of SP register in 8085. Discuss the instructions PUSH and POP. Write a code to demonstrate use of any one instruction.
  - B) What is time delay? Why is it needed? Explain how time delay can be generated using a register pair
- Q4) Attempt any one: (5)
- A) What do you mean by vectored interrupts? Discuss each of 8085 vectored interrupt in brief.
  - B) Write an assembly program for 8085 microprocessor to exchange the contents of 2020H and 2021H
- Q5) Attempt any one: (5)
- A) Compare 386 and Pentium
  - B) Compare Pentium and Pentium Pro
- Q6) Attempt any three: (15)
- A) Differentiate between higher level and lower level programming language. Also differentiate between machine language and assembly language.
  - B) Draw and explain the block dig of a computer with microprocessor as CPU.
  - C) Which are the basic four operations performed by the microprocessor? Explain the bus structure of 8085 microprocessor with necessary diagram.
  - D) Illustrate the memory address range of a memory chip with 1K bytes of memory. Explain how range can be changed by modifying the hardware.
  - E) With neat diagram explain the functional pin configuration of the 40 pin IC8085 microprocessor.
  - F) How will you chose to buy an i3, i5, i7 line of Pentiums



Max Time: 2½ hrs

WP

Max Marks: 75

## Web programming.

26/04/22

Instructions:

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

SECTION I

Answer the below given MCQs:

(35)

- 1) \_\_\_ is a format that tells a computer how to display a web page  
a) JavaScript      b) JAVA      c) CSS      d) HTML
- 2) \_\_\_ types of HTML heading that you can use at web pages  
a) 5      b) 6      c) 7      d) 4
- 3) \_\_\_ tag is used to create a link to another web page using the href attribute  
a) <href>      b) <link>      c) <a>      d) <connect>
- 4) \_\_\_ tag is used to define a client side image map  
a) <map>      b) <img>      c) <img src>      d) <img bg>
- 5) The <summary> element is a child element of \_\_\_  
a) <details>      b) <p>      c) <pos>      d) <abstract>
- 6) It is a language that describes the styles of an HTML documents  
a) JavaScript      b) JAVA      c) HTML5      d) CSS
- 7) It can be used in an individual page to apply the style specifically in that page  
a) internal      b) external      c) inline      d) default
- 8) A variable that is declared outside a function definition is a \_\_\_ variable  
a) Static      b) dynamic      c) global      d) local
- 9) A variable that is declared inside a function definition is a \_\_\_ variable  
a) Static      b) dynamic      c) global      d) local
- 10) This loop will always execute a block of code once and then it will repeat the loop as long as the specified condition is true  
a) While      b) do-while      c) for      d) for-each
- 11) The JavaScript \_\_\_ statement is used to execute one code from multiple expressions  
a) If      b) do-while      c) for      d) switch
- 12) It is used in a loop to abort the current cycle and exit from the smallest enclosing loop immediately  
a) Continue      b) break      c) abort      d) exit
- 13) An unordered list starts with the \_\_\_ tag  
a) <ol>      b) <li>      c) <od>      d) <ul>

- 14) \_\_\_\_\_ indicates the browser that text is preformatted not to be formatted again  
 a) <p>                      b) <pre>                      c) <pra>                      d) <fix>
- 15) It is also called as entry checking loop  
 a) While                      b) for-each                      c) do-while                      d) for
- 16) This is called exit checking loop  
 a) For                      b) for-each                      c) do-while                      d) while
- 17) The \_\_\_\_\_ statement is used to loop through array  
 a) For                      b) do-while                      c) for-each                      d) while
- 18) This defines cell in table  
 a) <td>                      b) <tr>                      c) <tb>                      d) <th>
- 19) \_\_\_\_\_ displays the contents in the italic forms  
 a) <b></b>                      b) <i></i>                      c) <p></p>                      d) <h></h>
- 20) Which of the following tag is used for inserting the largest heading in HTML?  
 a) <h3>                      b) <h5>                      c) <h1>                      d) <h6>
- 21) The correct sequence of HTML tags for starting a webpage is \_\_\_\_  
 a) Head, Title, HTML, body                      b) HTML, Body, Title, Head  
 c) HTML, Head, Title, Body                      d) HTML, body, head, title
- 22) Which character is used to represent the closing of a tag in HTML?  
 a) !                      b) /                      c) \                      d) ?
- 23) How to create a hyperlink in HTML?  
 a) <a href = "wwwgooglecom"> googlecom </a>  
 b) <a url = "wwwgooglecom" googlecom /a>  
 c) <a link = "wwwgooglecom"> googlecom </a>  
 d) <a> wwwgooglecom <googlecom /a>
- 24) How to insert a background image in HTML?  
 a) <body background = "imgpng">                      b) <bg-image = "imgpng">  
 c) <img background = "imgpng">                      d) <img src>
- 25) Which of the following function of the String object returns the character in the string starting at the specified position via the specified number of characters?  
 a) Slice()                      b) Split()                      c) Substr()                      d) Search()
- 26) Which one of the following is an ternary operator:  
 a) ?                      b) \*                      c) +                      d) -
- 27) A collection of elements of the same data type which may either in order or not, is called \_\_\_\_\_  
 a) String                      b) Serialized object                      c) Array                      d) Object
- 28) Which of the following tag is used to embed css in html page?  
 a) Xpath                      b) <style>                      c) XSLT                      d) <script>

- 29) PHP is an example of \_\_\_ scripting language  
 a) Server-side    b) Client-side    c) Browser-side    d) In-side
- 30) PHP script enclosed within \_\_\_  
 a) <php> </php>    b) <?php ?>    c) 'php ?php    d) <p> </p>
- 31) Which of the following variables is not a predefined variable?  
 → "not"    b) \$ask    c) \$request    d) \$post
- 32) Which statement will output \$x on ...  
 a) echo "\\$x";    b) echo "\$\$x";    c) -    d) echo"\$x";
- 33) PHP's numerically indexed array begin with position \_\_\_  
 a) 1    b) 2    c) 0    d) -1
- 34) Which of the following function is used to get the value of the previous element in an array?  
 a) last()    b) before    c) prev()    d) previous()
- 35) If \$a = 12 what will be returned when (\$a == 12) ? 5 : 1 is executed?  
 a) 1    b) 5    c) 12    d) 0

## SECTION II

- Q1) Attempt any one: (5)  
A) Write a short note on Telnet and FTP  
B) Explain different text formatting tags using suitable example.
- Q2) Attempt any one: (5)  
A) Explain how to use HTML5 semantic tags with suitable example?  
B) What is table tag? Define steps to create table in HTML5.
- Q3) Attempt any one: (5)  
A) Explain different operators in JavaScript.  
B) Write a short note on JavaScript Functions.
- Q4) Attempt any one: (5)  
A) Explain different conditional statements in PHP.  
B) Explain strlen() and strpos() function used in PHP.
- Q5) Attempt any one: (5)  
A) Explain use of cookies in PHP.  
B) Explain types of regular expression used in PHP.
- Q6) Attempt any three: (15)  
A) Explain list tags and its different types using suitable example.  
B) Write a short note on JavaScript Functions.  
C) Write a PHP program to display factorial of given number.  
D) Explain mail () function in PHP.  
E) Explain looping statements in Javascript.  
F) Write short note on Session.

27/04/22

CLASS-FYBSC(IT)

SUB : NUMERICAL AND  
STATISTICAL METHODS

Max. Time-2½ Hrs.

Max. Marks : 75

**Instructions :-**

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

**SECTION I****CHOOSE THE CORRECT ALTERNATIVES FROM THE FOLLOWING (35)**

- 1) \_\_\_\_\_ is the limit of Binomial distribution  
a) Poisson b) normal c) both a and b d) none of these
- 2) Gaussian distribution is also called \_\_\_\_\_  
a) normal b) Poisson c) a and b d) none of these
- 3) For normal distribution mean, median and mode are \_\_\_\_\_  
a) equal b) distinct c) a and b d) none of these
- 4) \_\_\_\_\_ random variable is just a binomial random variable with parameter (1, p)  
a) Bernoulli b) normal c) Variance d) none of these
- 5) The mean and variance Poisson distribution may be obtained as the limits of those of \_\_\_\_\_ distribution when n tends to infinity  
a) binomial b) Poisson c) normal d) none of these
- 6) A random Variable that take on at most a countable number of possible value is said to be \_\_\_\_\_  
a) discrete b) continuous c) both a and b d) none of these
- 7) Discrete distributions namely \_\_\_\_\_ distributions.  
a) binomial b) continuous c) both a and b d) none of these
- 8) The probability distributions of a continuous random variable it cannot be represented by a \_\_\_\_\_.  
a) table b) graph c) a and b d) none of these
- 9) If X is a discrete random variable having a probability mass function P(x) then the expectation or the expected value of X denoted by  
a) E(X) b) P(X) c) both a and b d) none of these
- 10) \_\_\_\_\_ of X is equal to the expected value of  $X^2$  minus the square of the expected value.

a) Variance b) Standard deviation c) a and b d) none of these

11) A \_\_\_\_\_ constraint is one which does not affect the feasible solution region  
a) infeasibility b) feasible c) redundancy d) none of these

12) \_\_\_\_\_ which are some economic or physical quantities whose value are of interest to the management  
a) decision variables b) objective functions c) constraints d) none of these

13) The problem must have a well defined \_\_\_\_\_ expressed in terms of the decision variables.  
a) decision variables b) objective functions c) constraints d) none of these

14) The decision variables interact with each other through some \_\_\_\_\_  
a) decision variables b) objective functions c) constraints d) none of these

15) The objective function and the constraints are \_\_\_\_\_ of the decision variables.  
a) decision variables b) objective functions c) constraints d) none of these

16) \_\_\_\_\_ analysis is a statistical techniques for modelling and investigating the relationship between two or more variables  
a) co-relation b) regression c) both a and b d) none of these

17) \_\_\_\_\_ is a versatile mathematical technique which can be applied to a variety of problems of management such a production, refinery operation, advertising, transportation distribution and investment analysis  
a) linear programming b) regression c) both a and b d) none of these

18) maximize the \_\_\_\_\_  
a) profit b) cost c) both a and b d) none of these

19) minimize the \_\_\_\_\_  
a) profit b) cost c) both a and b d) none of these

20) Any solution that also satisfies the non-negative restrictions of the general LPP is called a \_\_\_\_\_ solution.  
a) feasible b) basic c) degenerate d) none of these

21) \_\_\_\_\_ is a condition that arises when we cannot obtain a solution to a linear programming problem that satisfies all the constraints.

22) The \_\_\_\_\_ determines the area under the graph by approximating it to the of trapezoid  
a) forward difference operator b) Trapezoidal 's rule c) backward difference operator d) none of these

23) In the method of \_\_\_\_\_ the interval length  $k$  should be kept small and hence these methods can be applied for calculating  $y$  over a limited range only.

21. a) infeasibility  
b) feasibility  
c) 2 Regression  
d) None of these

a) Runge-kutta b) forward difference operator c) backward difference operator d) none of these

24) The process is very slow and to obtain reasonable with \_\_\_\_\_ we need to take a smaller value of  $k$ .

a) Bisection method b) Euler's method c) both a and b d) none of these

25) The \_\_\_\_\_ method there is a chance to check the values computed earlier whereas computing errors cannot be easily watched in the Runge Kutta methods

a) Taylor's series b) forward difference operator c) backward difference operator d) none of these

26)  $\Delta$  symbol is called the \_\_\_\_\_ operator .

a) forward difference b) backward difference c) both a and b d) none of these

27) The operator \_\_\_\_\_ called the shifting or translation operator

a) E b) M c) both a and b d) none of these

28) \_\_\_\_\_ interpolation can be applied with  $y$  as the independent variable and  $x$  as the dependent variable so that the value of  $x$  corresponding to a given of  $y$  can be calculated approximately.

a) Lagrange's interpolation b) Newton Raphson method c) both a and b d) none of these

29) \_\_\_\_\_ is the modification of Gauss elimination method

a) bisection method b) Gauss Seidel method c) Gauss Jordan method d) none of these

30) The \_\_\_\_\_ technique while transforming the coefficient matrix to upper triangular matrix

a) Pivoting b) forward difference c) backward difference d) none of these

31) The general method for deriving the \_\_\_\_\_ formulae is to differentiate the interpolating polynomial

a) numerical differentiation b) Forward difference c) Backward difference d) none of these

32) \_\_\_\_\_ is of great value in the study of numerical methods

a) Taylor's series b) Harmonic series c) both a and b d) none of these

33) The real root of a non-linear equation  $f(x)=0$  lose resembles the bisection method

a) Lagrange interpolation b) Linear programming c) Regula-falsi method d) none of these

34) \_\_\_\_\_ requires the evaluation of derivatives of the function and this is not possible

a) Newton Raphson Method b) Taylor's series c) linear programming d) none of these

- 35) \_\_\_\_\_ method also known as interval halving method  
 a) Newton Raphson method b) Bisection method c) Regulai-falsi method d) none of these

SECTION II

Q.1 Attempt any ONE (5)

- A. Find the true error, relative error and percent relative error of the following  
 The length of a table is  $X_a = 59.7$  in and the true length is  $X = 59.5$
- B Find the root of the equation  $x^3 + 3x^2 - 3 = 0$  correct upto five decimal places using Newton-Raphson method

Q.2 Attempt any ONE (5)

- A Using Newton's forward difference calculate value of  $y(1.5)$  from the following table

x	0	2	4	6
y	2	10	66	218

- B Obtain a root correct to two decimal places of the equation  $x^3 - 25 = 0$  by Regulai -Falsi method

Q.3 Attempt any ONE (5)

- A Using Newton's backward difference interpolation formula find  $f(1.7)$  From the table

x	-2	-1	0	1	2
y	4	26	58	112	466

- B Using lagrange's interpolation formula to find the value of  $y$  at  $x=3$  from the following table

x	1	2	5	6
y	10	15	22	35

Q.4 Attempt any ONE (5)

- A Evaluate  $\int_0^1 dx/4x+5$  by trapezoidal rule by using the following data as  $h=0.5$

x	0	0.5	1.0	1.5	2.0	2.5	3.0
y	0.25	0.1429	0.1111	0.0909	0.0769	0.0588	0.0588

- B. Solve the following system of equations by Gauss Jordan method  
 $2x - 3y + z = -1$ ,  $x + 4y + 5z = 13$ ,  $3x - 4y + z = 2$



Q.5 Attempt any ONE (5)

A Evaluate  $\int_0^1 \frac{dx}{1+x^2}$  using Simpson's (3/8) rule as  $h=1/3$

B Using Taylor's method find  $y(0.1)$  correct to 3 decimal places from  $dy/dx+2xy=1, y(0)=0$

Q.6 Attempt any Three (15)

- A) Explain Properties of Regression Coefficients
- B) Explain the Application of linear programming in Business and industry
- C) Explain Expected value, Variance
- D) Explain Properties of Poisson distribution
- E) Write a note on Linear Programming Problem

□□□□□□□□□□

5

Max Time: 2½ hrs

Max Marks: 75

Green Computing.

28/04/22

Instructions:

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

SECTION I

Answer the below given MCQs:

(35)

- 1) \_\_\_\_\_ = Total facility power/IT equipment power
 

a) PUE	c) DCE
b) PDU	d) KVM
  
- 2) What is most commonly used for managing the resources for every virtual system?
 

a) Load balancer	c) Router
b) Cloud	d) Hypervisor
  
- 3) The EPA's product rating system that assesses the environmental impact of consumer and commercial products is called:
 

a) Energy Star	c) Energy Point
b) Energy Check	d) Energy Score
  
- 4) Steps to measure carbon footprinting does not include
 

a) Do not Report the result to stakeholders
b) Baseline should be set
c) Define what all things contribute to carbon footprint
d) Track and analyze carbon footprint of organization
  
- 5) \_\_\_\_\_ is charitable non-governmental organization which focuses on reducing the export of hazardous waste from development countries to developing countries.
 

a) Basel Action Network
b) Byte Back program
c) RoHS
d) StEP(Solving e-waste problem )
  
- 6) \_\_\_\_\_ is a measure of amount of energy consumed per square feet of floor space.
 

a) storage density	c) Data Center Density
b) SWaP	d) Storage Utilization
  
- 7) A system that employs hundreds or thousands of hard drives for near line data storage are called
 

a) RAID	c) StEP
b) EPEAT	d) MAID
  
- 8) Point out the incorrect statement
 

a) A cloud has multiple application instances and directs requests to an instance based on conditions
b) A client can request access to a cloud service from any location

- c) Computers can be partitioned into a set of virtual machines with each machine being assigned a workload
- d) Computers cannot be partitioned into a set of virtual machines with each machine being assigned a workload
- 9) BAN runs this campaign
- a) Crime
- b) Basel Ban Ratification
- c) SAN
- d) Watch the dog
- 10) Buildings employing \_\_\_\_\_ solar techniques have walls, floors, ceilings, and more that are designed to gather and disperse solar heat to both air and water.
- a) Passive
- b) static
- c) reactive
- d) active
- 11) STEP Task Forces does not include
- a) ReDesign
- b) Policy Legislation
- c) ReCycle
- d) ReSearch
- 12) How many types of economizers are there
- a) 2
- b) 1
- c) 3
- d) 4
- 13) \_\_\_\_\_ Used in small amounts in bulbs to backlight flat-panel computer monitors and notebook displays.
- a) PVC
- b) Cadmium
- c) Mercury
- d) lead
- 14) \_\_\_\_\_ recommends selecting recyclers who maximize reuse, refurbishment, and recycling over disposal and incineration.
- a) RIOS
- b) IAER
- c) EDI
- d) EPA
- 15) \_\_\_\_\_ company Excito offers a low-power, quiet Linux file and print server based on Debian Linux.
- a) Japanese
- b) American
- c) Swedish
- d) Russian
- 16) \_\_\_\_\_ is designed for write once, read occasionally (WORO) applications.
- a) Green Drives
- b) RAID
- c) LCD
- d) MAID
- 17) The biggest source of wood consumption is \_\_\_\_\_ production.
- a) Paper
- b) Glass
- c) Ink
- d) furniture.
- 18) "\_\_\_\_\_ " is a tool for reducing storage and bandwidth consumed from disk-based backup.
- a) data de-duplication
- b) Virtualization.
- c) Storage
- d) Management
- 19) Use of \_\_\_\_\_ to block the open air above your racks that have been configured into a hot-aisle/cool-aisle layout.

- a) Rigid enclosures.  
b) flexible strip curtains
- c) Hot-aisle  
d) cool aisle
- 20) \_\_\_\_\_ can vaporize and enter the atmosphere, thus contributing to indoor air pollution.
- a) VOCs  
b) Carpet
- c) Paint  
d) Cleaning Products
- 21) A program designed by Australian government along with various industries to dispose e-waste safely is known as
- a) Basel Action Network  
b) RoHS
- c) Byteback  
d) WEEE
- 22) WEEE stands for
- a) Wastern Electrical and Electronic Equipment  
b) Waste Electrical and Electronic Equipment  
c) Wifi Electrical and Electronic Equipment  
d) world Electrical and Electronic Equipment
- 23) Sun Microsystem operates its own telecommuting program called \_\_\_\_\_
- a) windows  
b) Internet
- c) iWork  
d) Infosys
- 24) with \_\_\_\_\_ workers can work from home or if they need to they can drive to a flexible work center.
- a) Telecommuting  
b) Telecommunicating
- c) Video Conferencing  
d) Zoom
- 25) \_\_\_\_\_ is defined as the total amount of greenhouse gas emission caused by organization expressed as Co2.
- a) oxygen footprint  
b) carbon footprint
- c) nitrogen footprint  
d) toxin footprint
- 26) \_\_\_\_\_ is a small ,mobile , handheld device that provides features like computing,fax, telephone, internet and networking.
- a) Smart Phone  
b) PDA(personal Digital Assistant)
- c) PDA ( personal device App)  
d) PD ( Pen drive
- 27) \_\_\_\_\_ is a portable PC that is hybrid between laptop and personal digital assistant.
- a) PC  
b) Notebook computer
- c) Tablet PC  
d) Super Computer
- 28) \_\_\_\_\_ means damaged equipment to bring it workable or better looking condition.
- a) reusing  
b) refurbishing
- c) renewal  
d) reactivation
- 29) \_\_\_\_\_ is one of the fastest growing components of waste stream in the world.
- a) e-learning  
b) e-shopping
- c) e-waste  
d) use of internet
- 30) \_\_\_\_\_ is defined as the total amount of greenhouse gas emission caused by organization expressed as Co2.

- a) oxygen footprint  
b) carbon footprint
- c) nitrogen footprint  
d) toxin footprint
- 31) \_\_\_\_\_ is a system that employs hundreds or thousands of hard drives for near-line storage.  
a) MAID  
b) Green Hard Drive  
c) SAID  
d) RAID
- 32) A \_\_\_\_\_ is a private Internet operating within organization.  
a) Intranet.  
b) Arpanet  
c) WIFI  
d) blue tooth
- 33) following is not component of Intranet  
a) LAN  
b) WAN  
c) WEB SERVER  
d) WEB BROWSER
- 34) \_\_\_\_\_ is used to easily add, delete, and update content of the website.  
a) LAN  
b) CONTENT MANAGEMENT  
c) WEB SERVER  
d) WEB BROWSER
- 35) \_\_\_\_\_ allows exchange of business documents in a standardize electronic format between business partners.  
a) Whatsapp  
b) Electronic Data Interchange ( EDI)  
c) Google  
d) Internet Explorer

### SECTION II

- Q1) Attempt any one: (5)  
A) List and Explain the Various Toxins present in Computer Systems.  
B) Explain How Green Computing Effects on Cost Saving.
- Q2) Attempt any one: (5)  
A) Explain MAID and RAID.  
B) What is Polling? Give Examples.
- Q3) Attempt any one: (5)  
A) Describe Intranet ? How to build it.  
B) What is Telecommuting? Explain in Detail.
- Q4) Attempt any one: (5)  
A) Write Short note on refurbishing?  
B) Give Advantages and Disadvantages of buying equipments.
- Q5) Attempt any one: (5)  
A) List and Explain Tools Used for measuring and Tracking our Data.  
B) Describe the work of Chief Green Officer.
- Q6) Attempt any three: (15)  
A) What StEP stand for? Explain its Objective.  
B) State Advantages of Custom Centralized Air Handling System.  
C) Write Short notes on PDA and Tablet PC.  
D) List Various ways to clean Hard Drive .Explain any two.  
E) Explain Characteristics of Software as Service.