11

11 COMPUTER SCIENCE

11th Standard

Computer Science

157 x 1 = 157

1) First generation computers used

(a) Vacuum tubes (b) Transistors (c) Integrated circuits (d) Microprocessors

2) Name the volatile memory

(a) ROM (b) PROM (c) RAM (d) EPROM

3) Identify the output device

(a) Keyboard (b) Memory (c) Monitor (d) Mouse

4) Identify the input device

(a) Printer (b) Mouse (c) Plotter (d) Projector

5) _____ output device is used for printing building plan.

(a) Thermal printer (b) Plotter (c) Dot matrix (d) Inkjet printer

6) Which one of the following is used to in ATM machines

(a) Touch Screen (b) Speaker (c) Monitor (d) Printer

7) When a system restarts which type of booting is used.

(a) Warm booting (b) Cold booting (c) Touch boot (d) Real boot

8) Expand POST

(a) Post on self Test (b) Power on Software Test (c) Power on Self Test

(d) Power on Self Text

9) Which one of the following is the main memory?

(a) ROM (b) RAM (c) Flash drive (d) Hard disk

10) Which generation of computer used IC's?

(a) First (b) Second (c) Third (d) Fourth

11) Which refers to the number of bits processed by a computer's CPU?

(a) Byte (b) Nibble (c) Word length (d) Bit

12) How many bytes does 1 KiloByte contain?

(a) 1000 (b) 8 (c) 4 (d) 1024

13) Expansion for ASCII

(a) American School Code for Information Interchange

(b) American Standard Code for Information Interchange

(c) All Standard Code for Information Interchange

(d) American Society Code for Information Interchange

14) 2^50 is referred as

(a) Kilo (b) Tera (c) Peta (d) Zetta

15) How many characters can be handled in Binary Coded Decimal System?

(a) 64 (b) 255 (c) 256 (d) 128

16) For 1101_2 the equalent Hexadecimal equivalent is?

(a) F (b) E (c) D (d) B

17) What is the 1's complement of 00100110?

(a) 00100110 (b) 11011001 (c) 11010001 (d) 00101001

18) Which amongst this is not an Octal number?

(a) 645 (b) 234 (c) 876 (d) 123

19) Which is a basic electronic circuit which operates on one or more signals?

(a) Boolean algebra (b) Gate (c) Fundamental gates (d) Derived gates

20) Which gate is called as the logical inverter?

(a) AND (b) OR (c) NOT (d) XNOR

21) A + A =?

(a) A (b) O (c) I (d) A

22) NOR is a combination of?

(a) NOT(OR) (b) NOT(AND) (c) NOT(NOT) (d) NOT(NOR)

23) NAND is called as .....Gate

(a) Fundamental Gate (b) Derived Gate (c) Logical Gate (d) Universal gate

24) Which of the following is said to be the brain of a computer?

(a) Input devices (b) Output devices (c) Memory device (d) Microprocessor

25) Which of the following is not the part of a microprocessor unit?

(a) ALU (b) Control unit (c) Cache memory (d) register

26) How many bits constitute a word?

(a) 8 (b) 16 (c) 32 (d) determined by the processor used.

27) Which of the following device identifies the location when address is placed in the memory address register?

(a) locator (b) encoder (c) decoder (d) multiplexed

28) Which of the following is a CISC processor?

(a) Intel P6 (b) AMD K6 (c) Pentium III (d) Pentium IV

29) Which is the fastest memory?

(a) Hard disk (b) Main memory (c) Cache memory (d) Blue-Ray disc

30) How many memory locations are identified by a processor with 8 bits address bus at a time?

(a) 28 (b) 1024 (c) 256 (d) 8000

31) What is the capacity of 12cm diameter DVD with single sided and single layer?

(a) 4.7 GB (b) 5.5 GB (c) 7.8 GB (d) 2.2 GB

32) What is the smallest size of data represented in a CD?

(a) blocks (b) sectors (c) pits (d) tracks

33) Display devices are connected to the computer through

(a) USB port (b) Ps/2 port (c) SCSI port (d) VGA connector

34) Operating system is a

(a) Application Software (b) Hardware (c) System Software (d) Component

35) Identify the usage of Operating Systems

(a) Easy interaction between the human and computer

(b) Controlling Input & Output Devices (c) Managing use of main memory

(d) All the above

36) Which of the following is not a Function of Operating System?

(a) Process Management (b) Memory Management (c) Security management

(d) Compiler Environment

37) Which of the following OS is a Commercially licensed Operating system?
(a) Windows (b) UBUNTU (c) FEDORA (d) REDHAT
38) Which of the following Operating system are support Mobile Devices?
(a) Windows 7 (b) Linux (c) BOSS (d) iOS
39) File Management manages
(a) Files (b) Folders (c) Directory systems (d) All the Above
40) Interactive Operating System provides
(a) Graphics User Interface (GUI) (b) Data Distribution (c) Security Management
(d) Real Time Processing
41) An example for single task operating system is
(a) Linux (b) Windows (c) MS-DOS (d) Unix
42) The File management system used by Linux is
(a) ext2 (b) NTFS (c) FAT (d) NFTS
43) From the options given below, choose the operations managed by the operating system.
(a) Memory (b) Processes (c) Disks and I/O devices (d) all of the above
44) Which is the default folder for many Windows Applications to save your file?
(a) My Document (b) My Pictures (c) Documents and Settings (d) My Computer
45) Under which of the following OS, the option Shift + Delete - permanently deletes a file or folder?
(a) Windows 7 (b) MS-DOS (c) Linux (d) Android OS
46) What is the meaning of "Hibernate" in Windows XP/Windows 7?
(a) Restart the Computer in safe mode (b) Restart the Computer in hibernate mode
(c) Shutdown the Computer terminating all the running applications
(d) Shutdown the Computer without closing the running applications
47) The shortcut key used to rename a file in windows.
(a) F2 (b) F4 (c) F5 (d) F6
48) Which of the following activities is algorithmic in nature?
(a) Assemble a bicycle. (b) Describe a bicycle. (c) Label the parts of a bicycle.
(d) Explain how a bicycle works.
49) Which of the following activities is not algorithmic in nature?
(a) Multiply two numbers (b) Draw a kolam (c) Walk in the park
(d) Swaping of two numbers
50) Omitting details inessential to the task and representing only the essential features of the task is known as
(a) specification (b) abstraction (c) composition (d) decomposition
51) Stating the input property and the input-output relation a problem is known
(a) specification (b) statement (c) algorithm (d) definition
52) Ensuring the input-output relation is
(a) the responsibility of the algorithm and the right of the user.
(b) the responsibility of the user and the right of the algorithm.
(c) the responsibility of the algorithm but not the right of the user.
(d) the responsibility of both the user and the algorithm.
53) If i = 5 before the assignment i := i-1 after the assignment, the value of i is
(a) 5 (b) 4 (c) 3 (d) 2

54) If 0 < i before the assignment i := i-1 after the assignment, we can conclude that

(a) 0 < i (b) $0 \leq i$ (c) i = 0 (d) $0 \geq i$

55) Suppose u, v = 10, 5 before the assignment. What are the values of u and v after the sequence of assignments?

1 u :=v
2 v := u

(a) u, v = 5,5 (b) u, v = 5,10 (c) u, v = 10,5 (d) u, v = 10,10

56) Which of the following properties is true after the assignment (at line 3)?

1 --i, j = 0, 0
2 i, j := i+1, j-1
3 -- ?

(a) i + j > 0 (b) i+j < 0 (c) i+j=0 (d) i = j

57) If C1 is false and C2 is true, the compound statement

1 if CI
2 SI
3 else
4 if C2
5 S2
6 else
7 S3

executes

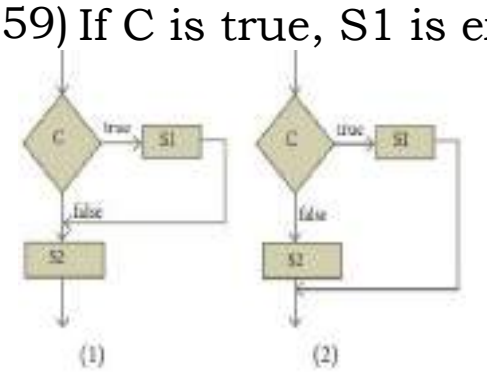
(a) S1 (b) S2 (c) S3 (d) none

58) If C is false just before the loop, the control flows through

1 SI
2 while C
3 S2
4 S3

(a) S1 ; S3 (b) S 1 ; S2 ; S3 (c) S 1 ; S2 ; S2 ; S3 (d) S 1 ; S2 ; S2 ; S2 ; S3

59) If C is true, S1 is executed in both the flowcharts, but S2 is executed in



(1) (2)

(a) (1) only (b) (2) only (c) both (1) and (2) (d) neither (1) nor (2)

60) How many times the loop is iterated?

i:= 0
while i $\neq$5
i := i+ 1

(a) 4 (b) 5 (c) 6 (d) 0

61) A loop invariant need not be true

(a) at the start of the loop (b) at the start of each iteration

(c) at the end of each iteration (d) at the start of the algorithm

62) We wish to cover a chessboard with dominoes,☐☐ the number of black squares and the number of white squares covered by dominoes, respectively, placing a domino can be modeled by

(a) b:= b + 2 (b) w:= w + 2 (c) b, w := b + 1, w + 1 (d) b:= w

63) If m x a + n x b is an invariant for the assignment a, b: = a + 8, b + 7, the values of m and n are

(a) m = 8, n = 7 (b) m = 7, n = -8 (c) m = 7, n = 8 (d) m = 8, n = -7

64) Which of the following is not an invariant of the assignment? m, n := m+2, n+3

(a) m mod 2 (b) n mod 3 (c) 3 x m - 2 x n (d) 2 x m - 3 x n

65) If Fibonacci number is defined recursively as

$$F(n) = \begin{cases} 0 \text{ n} = 0 \\ 1 \text{ n} = 1 \\ \text{F(n} - 1) + \text{F(n} - 2) \text{ otherwise} \end{cases}$$

to evaluate F(4), how many times F() is applied?

(a) 3 (b) 4 (c) 8 (d) 9

66) Using this recursive definition

$$a^n = \begin{cases} 1 & \text{if } n = 0 \\ a \times a^{n-1} & \text{otherwise} \end{cases}$$

how many multiplications are needed to calculate a^{10}?

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

67) Who developed C++?

(a) Charles Babbage (b) Bjarne Stroustrup (c) Bill Gates (d) Sundar Pichai

68) What was the original name given to C++?

(a) CPP (b) Advanced C (c) C with Classes (d) Class with C

69) Who coined C++?

(a) Rick Mascitti (b) Rick Bjarne (c) Bill Gates (d) Dennis Ritchie

70) The smallest individual unit in a program is:

(a) Program (b) Algorithm (c) Flowchart (d) Tokens

71) Which of the following operator is extraction operator of C++?

(a) > > (b) < < (c) < > (d) ^^

72) Which of the following statement is not true?

(a) Keywords are the reserved words convey specific meaning to the C++ compiler

(b) Reserved words or keywords can be used as an identifier name

(c) An integer constant must have at least one digit without a decimal point

(d) Exponent form of real constants consists of two parts

73) Which of the following is a valid string literal?

(a) 'A' (b) 'Welcome' (c) 1232 (d) "1232"

74) A program written in high level language is called as

(a) Object code (b) Source code (c) Executable code (d) All the above

75) Assume a = 5, b = 6; what will be result of a & b?

(a) 4 (b) 5 (c) 1 (d) 0

76) Which of the following is called as compile time operators?

(a) sizeof (b) pointer (c) virtual (d) this

77) How many categories of data types are available in C++?

(a) 5 (b) 4 (c) 3 (d) 2

78) Which of the following data types is not a fundamental type?

(a) signed (b) int (c) float (d) char

79) What will be the result of following statement?

```
char ch= 'B';
cout < < (int) ch;
```

(a) B (b) b (c) 65 (d) 66

80) Which of the character is used as suffix to indicate a floating point value?

(a) F (b) C (c) L (d) D

81) How many bytes of memory is allocated for the following variable declaration if you are using Dev C++? short int x;

(a) 2 (b) 4 (c) 6 (d) 8

82) What is the output of the following snippet?

```
char ch = 'A';
ch = ch + 1;
```

(a) B (b) A1 (c) F (d) 1A

83) Which of the following is not a data type modifier?

(a) signed (b) int (c) long (d) short

84) Which of the following operator returns the size of the data type?

(a) sizeof () (b) int () (c) long () (d) double ()

85) Which operator is used to access reference of a variable?

(a) $ (b) # (c) & (d) !

86) This can be used as alternate to endl command:

(a) \t (b) \b (c) \0 (d) \n

87) What is the alternate name of null statement?

(a) No statement (b) Empty statement (c) Void statement (d) Zero statement

88) In C++, the group of statements should be enclosed within:

(a) { } (b) [ ] (c) ( ) (d) < >

89) The set of statements that are executed again and again in iteration is called as:

(a) condition (b) loop (c) statement (d) body of loop

90) The multi way branch statement:

(a) if (b) if...else (c) switch (d) for

91) How many types of iteration statements?

(a) 2 (b) 3 (c) 4 (d) 5

92) How many times the following loop with execute? for (int i=0; i< 10; i++).

(a) 0 (b) 10 (c) 9 (d) 11

93) Which of the following is the exit control loop?

(a) for (b) while (c) do ... while (d) if ... else

94) Identify the odd one from the keywords of jump statements:

(a) break (b) switch (c) goto (d) continue

95) Which of the following is called entry control loop?

(a) do-while (b) for (c) while (d) if-else

96) A loop that contains another loop inside its body:

(a) Nested loop (b) Inner loop (c) Inline loop (d) Nesting of loop

97) Which of the following header file defines the standard I/O predefined functions?

(a) stdio.h (b) math.h (c) string.h (d) ctype.h

98) Which function is used to check whether a character is alphanumeric or not:

(a) isalpha ( ) (b) isdigit () (c) isalnum () (d) islower ()

99) Which function begins the program execution?

(a) isalpha() (b) isdigit() (c) main() (d) islower()

100) Which of the following function is with a return value and without any argument?

(a) x=display(int, int) (b) x=display() (c) y=display(float) (d) display(int)

101) Which is return data type of the function prototype of add(int, int);?

(a) int (b) float (c) char (d) double

102) Which of the following is the scope operator?

(a) > (b) & (c) % (d) ::

103) Which of the following is the collection of variables of the same type that an referenced by a common name?

(a) int (b) float (c) Array (d) class

104) int age[]={6,90,20,18,2}; How many elements are there in this array?

(a) 2 (b) 5 (c) 6 (d) 4

105) cin > > n[3]; To which element does this statement accepts the value?

(a) 2 (b) 3 (c) 4 (d) 5

106) By default, a string ends with which character?

(a) \o (b) \t (c) \n (d) \b

107) Structure definition is terminated by

(a) } (b) ; (c) :: (d) (:)

108) What will happen when the structure is declared?

(a) it will not allocate any memory (b) it will allocate the memory

(c) it will be declared and initialized (d) it will be only declared

109) A structure declaration is given below:

```
struct Time
{
int hours;
int minutes;
int seconds;
} t;
```

Using above declaration which of the following refers to seconds.

(a) Time.seconds (b) Time::seconds (c) seconds (d) t.seconds

110) Which of the following is a properly defined structure?

(a) struct {int num;} (b) struct sum {int num;} (c) struct sum int sum;

(d) struct sum {int num;} ;.

111) A structure declaration is given below

```
struct employee
{
int empno;
char ename[10];
}e[5] ;
```

Using above declaration which of the following statement is correct.

(a) cout< < e[0].empno< < e[0].ename; (b) cout< < e[0].empno< < ename;

(c) cout< < e[0]- > empno< < e[0]- > ename; (d) cout< < e.empno< < e.ename;

112) When accessing a structure member, the identifier to the left of the dot operator is the name of

(a) structure variable (b) structure tag (c) structure member (d) structure function

113) The term is used to describe a programming approach based on classes and objects is

(a) OOP (b) POP (c) ADT (d) SOP

114) The paradigm which aims more at procedures.

(a) Object Oriented Programming (b) Procedural programming

(c) Modular programming (d) Structural programming

115) Which of the following is a user defined data type?

(a) class (b) float (c) int (d) object

116) The identifiable entity with some characteristics and behaviour is

(a) class (b) object (c) structure (d) member

117) The mechanism by which the data and functions are bound together into a single unit is known as

(a) Inheritance (b) Encapsulation (c) Polymorphism (d) Abstraction

118) Insulation of the data from direct access by the program is called as

(a) Data hiding (b) Encapsulation (c) Polymorphism (d) Abstraction

119) Which of the following concept encapsulate all the essential properties of the object that are to be created?

(a) class (b) Encapsulation (c) Polymorphism (d) Abstraction

120) Which of the following is the most important advantage of inheritance?

(a) data hiding (b) code reusability (c) code modification (d) accessibility

121) "Write once and use it multiple time" can be achieved by

(a) redundancy (b) reusability (c) modification (d) composition

122) Which of the following supports the transitive nature of data?

(a) Inheritance (b) Encapsulation (c) Polymorphism (d) Abstraction

123) The variables declared inside the class are known as

(a) data (b) inline (c) method (d) attributes

124) Which of the following statements about member functions are True or False?

(i) A member function can call another member function directly with using the dot operator.

(ii) Member function can access the private data of the class.

(a) i-True, ii-True (b) i-False, ii-True (c) i-Trrue, ii-False (d) i-False, ii-False

125) A member function can call another member function directly, without using the dot operator called as

(a) sub function (b) sub member (c) nesting of member function

(d) sibling of member function

126) The member function defined within the class behave like_____functions.

(a) inline (b) Non inline (c) Outline (d) Data

127) Which of the following access specifier protects data from inadvertent modifications?

(a) Private (b) Protected (c) Public (d) Global

128) class x

```
{
int y;
public:
x(int z){y=z;}
} x1[4];
int main()
{ x x2(10);
return 0;}
```

How many objects are created for the above program?

(a) 10 (b) 14 (c) 5 (d) 2

129) State whether the following statements about the constructor are True or False.
(i) constructors should be declared in the private section
(ii) constructors are invoked automatically when the objects are created.

(a) True, True (b) True, False (c) False, True (d) False, False

130) Which of the following constructor is executed for the following prototype?
add display (add &): - // add is a class name

(a) Default constructor (b) Parameterized constructor (c) Copy constructor
(d) Non Parameterized constructor

131) Which of the following refers to a function having more than one distinct meaning?

(a) Function Overloading (b) Member overloading (c) Operator overloading
(d) Operations overloading

132) Which of the following reduces the number of comparisons in a program?

(a) Operator overloading (b) Operations overloading (c) Function Overloading
(d) Member overloading

133) void dispchar(char ch='$';int size=10)
{
for(int i=1;i < = size;i++)
cout < < ch
}
How will you invoke the function dispchar() for the following input?
To print $ for 10 times

(a) dispchar (); (b) dispchar(ch,size); (c) dispchar($,10); (d) dispchar('$',10 times);

134) Which of the following is not true with respect to function overloading?

(a) The overloaded functions must differ in their signature
(b) The return type is also considered for overloading a function
(c) The default arguments of overladed functions are not considered for Overloading
(d) Destructor function cannot be overloaded

135) Which of the following is invalid prototype for function overloading

(a) void fun (intx); (b) void fun (intx); (c) void fun (double d); (d) void fun (double d);
void fun (char ch); void fun (inty); void fun (char ch); void fun (inty);

136) Which of the following is the process of creating new classes from an existing class

(a) Polymorphism (b) Inheritance (c) Encapsulation (d) super class

137) Which of the following derives a class student from the base class school

(a) school: student (b) class student: public school (c) student: public school
(d) class school: public student

138) The type of inheritance that reflects the transitive nature is

(a) Single Inheritance (b) Multiple Inheritance (c) Multilevel Inheritance
(d) Hybrid Inheritance

139) Which visibility mode should be used when you want the features of the base class to be available to the derived Class but not to the classes that are derived from the derived class?

(a) Private (b) Public (c) Protected (d) All of these

140) Inheritance is a process of creating new class from

(a) Base class (b) abstract (c) derived class (d) Function

141) A class is derived from a class which is a derived class itself, then this is referred to as

(a) multiple inheritance (b) multilevel inheritance (c) single inheritance

(d) double inheritance

142) Which amongst the following is executed in the order of inheritance?

(a) Destructor (b) Member function (c) Constructor (d) Object

143) Which of the following is true with respect to inheritance?

(a) Private members of base class are inherited to the derived class with private.

(b) Private members of base class are not inherited to the derived class with private accessibility

(c) public members of base class are inherited but not visible to the derived class.

(d) Protected members of base class are inherited but not visible to the outside class.

144) class vehicle
{ int wheels;
public:
void input_data(float,float);
void output_data();
protected:
int passenger;
};
class heavy_vehicle : protected vehicle {
int diesel_petrol;
protected:
int load;
public:
void read_data(float,float)
void write_data(); };
class bus: private heavy_vehicle {
char Ticket[20];
public:
void fetch_data(char);
void display_data(); };
Which is the base class of the class heavy_vehicle?

(a) Bus (b) heavy_vehicle (c) Vehicle (d) Both (a) and (c)

145) class vehicle
{ int wheels;
public:
void input_data(float,float);
void output_data();
protected:
int passenger;
};
class heavy_vehicle : protected vehicle {
int diesel_petrol;
protected:
int load;
public:
void read_data(float,float)
void write_data(); };
class bus: private heavy_vehicle {
char Ticket[20];
public:
void fetch_data(char);
void display_data(); };
The data member that can be accessed from the function display data()

(a) passenger (b) load (c) Ticket (d) All of these

146) class vehicle
{ int wheels;
public:
void input_data(float,float);
void output_data();
protected:
int passenger;
};
class heavy_vehicle : protected vehicle {
int diesel_petrol;
protected:
int load;
public:
void read_data(float,float)
void write_data(); };
class bus: private heavy_vehicle {
char Ticket[20];
public:
void fetch_data(char);
void display_data(); };
The member function that can be accessed by an objects of bus Class is

(a) input data(), output _data() (b) read _data() ,write _data()

(c) fetch _data(), display_data() (d) All of these

147) class vehicle
{ int wheels;
public:
void input_data(float,float);
void output_data();
protected:
int passenger;
};
class heavy_vehicle : protected vehicle {
int diesel_petrol;
protected:
int load;
public:
void read_data(float,float)
void write_data(); };
class bus: private heavy_vehicle {
char Ticket[20];
public:
void fetch_data(char);
void display_data(); };
The member function that is inherited as public by Class Bus

(a) input_data(), output_data() (b) read_data(), write_data()

(c) fetch _data(),display _data() (d) none of these

148) Which of the following deals with procedures, practices and values?

(a) piracy (b) programs (c) virus (d) computer ethics

149) Commercial programs made available to the public illegally are known as

(a) freeware (b) warez (c) free software (d) software

150) Which one of the following are self-repeating and do not require a computer program to attach themselves?

(a) viruses (b) worms (c) spyware (d) Trojans

151) Which one of the following tracks a user visits a website?

(a) spyware (b) cookies (c) worms (d) Trojans

152) Which of the following is not a malicious program on computer systems?

(a) Worms (b) Trojans (c) Spyware (d) Cookies

153) A computer network security that monitors and controls incoming and outgoing traffic is

(a) cookies (b) virus (c) firewall (d) worms

154) The process of converting cipher text to plain text is called

(a) Encryption (b) Decryption (c) key (d) proxy server

155) E-commerce means

(a) electronic commerce (b) electronic data exchange (c) electric data exchange

(d) electronic commercialization

156) Distributing unwanted e-mail to other is called

(a) scam (b) spam (c) fraud (d) spoofing

157) Legal recognition for transactions are carried out by

(a) Electronic Data Interchange (b) Electronic Data Exchange

(c) Electronic Data Transfer (d) Electrical Data Interchange

158) What is a computer?

159) Distinguish between data and information?
160) What are the components of a CPU?
161) What is the function of an ALU?
162) Write the functions of control unit.
163) What is the function of memory?
164) Differentiate Input and output unit.
165) Distinguish Primary and Secondary memory.
166) What is data?
167) Write the 1's complement procedure.
168) Convert $(46)_{10}$ into Binary number
169) We cannot find 1's complement for $(28)_{10}$. State reason.
170) List the encoding systems that represents characters in memory
171) What Is Boolean Algebra?
172) Write a short note on NAND Gate
173) Draw the truth table for XOR gate
174) Write the associative laws?
175) What are derived gates?
176) Convert the following Octal numbers into Binary numbers. - 645_8
177) Convert the following Hexadecimal numbers to Binary numbers A6.
178) Write the 1's complement number and 2's complement number for the following decimal number: 22
179) Convert the following Hexadecimal numbers to Binary numbers : BE
180) Convert the following Hexadecimal numbers to Binary numbers BC9.
181) Write the 1's complement number and 2's complement number for the following decimal number: -**46**
182) Perform the following binary computations $\mathbf{14_{10} - 12_{10}}$
183) The binary sequence $(1101)_2$ has the decimal equivalent:
184) The Octal sequence $(547)_8$ has the decimal equivalent:
185) Decimal Number System $(123)_{10}$
186) The hexadecimal sequence $(25)_{16}$ has the decimal equivalent:
187) Convert $(65)_{10}$ into its equivalent binary number
188) The conversion steps can be given as follows:
189) Convert $(65)_{10}$ into its equivalent Octal number
190) Convert $(31)_{10}$ into its equivalent hexadecimal number.
191) Convert $(111011)_2$ into its equivalent decimal number.
192) Convert $(11010110)_2$ into octal equivalent number
193) Convert $(1111010110)_2$ into Hexadecimal number
194) Convert the given Binary number $(11.011)_2$ into its decimal equivalent Integer part $(11)_2 = 3$ (Refer table 2.2)
195) Convert $(1265)_8$ to equivalent Decimal number
196) Convert $(6213)_8$ to equivalent Binary number
197) Convert $(25F)_{16}$ into its equivalent Decimal number.
198) Convert $(8BC)_{16}$ into equivalent Binary number
199) Find 1's complement for $(–24)_{10}$
200) 2's Complement represent of $(-24)_{10}$
201) Add: $1011_2 + 1001_2$
202) What are the parameters which influence the characteristics of a microprocessor?
203) What is an instruction?

204) What is a program counter?
205) What is HDMI?
206) Which source is used to erase the content of a EPROM?
207) List out any two uses of Operating System?
208) What is multi-user Operating system?
209) What is a GUI?
210) What are the security management features available in Operating System?
211) What is multi-processing?
212) What are the different Operating Systems used in computer?
213) Differentiate Files and Folders.
214) Differentiate Save and save As option.
215) What is known as Multitasking?
216) What are called standard icons?
217) How will you Rename a File?
218) Define an algorithm.
219) Distinguish between an algorithm and a process
220) Specify a function to find the minimum of two numbers.
221) Distinguish between a condition and a statement.
222) Draw a flowchart for conditional statement.
223) Both conditional statement and iterative statement have a condition and a statement. How do they differ?
224) What is the difference between an algorithm and a program?
225) Why is function an abstraction?
226) How do we refine a statement?
227) What is an invariant?
228) Define a loop invariant.
229) Does testing the loop condition affect the loop invariant? Why?
230) What is the relationship between loop invariant, loop condition and the input-output recursively?
231) What is recursive problem solving?
232) Define factorial of a natural number recursively
233) What is meant by a token? Name the token available in C++.
234) What are keywords? Can keywords be used as identifiers?
235) The following constants are of which type?
(i) 39
(ii) 032
(iii) 0XCAFE
(iv) 04.14
236) Write the following real constants into the exponent form:
(i) 23.197
(ii) 7.214
(iii) 0.00005
(iv) 0.319
237) Assume n=10; what will be result of n++ and --n;?
238) Match the following

A	**B**
(a) Modulus	(1) Tokens
(b) Separators	(2) Remainder of a division
(c) Stream extraction	(3) Punctuators
(d) Lexical Units	(4) get from

239) Write a short note on const keyword with an example.
240) What is the use of setw ( ) format manipulator?
241) Why is char often treated as integer data type?
242) What is a reference variable? What is its use?
243) Consider the following C++ statement. Are they equivalent?
char ch = 67;
char ch = 'C';
244) What is the difference between 56L and 56?
245) Determine which of the following are valid constant? And specify their type.
(i) 0.5
(ii) 'Name'
(iii) '\t'
(iv) 27,822
246) Suppose x and y are two double type variable that you want add as integer and assign to an integer variable. Construct a C++ statement for the doing so.
247) What will be the result of following if num=6 initially.
(a) cout < < num;
(b) cout < < (num == 5);
248) Which of the following two statements are valid? Why? Also write their result.
int a;
(i) a = 3,014;
(ii) a=(3,014);
249) What is meant by literals? How many types of integer literals are available in C++?
250) What kind of constants are following? i) 26 ii) 015 iii) 0xF iv) 014.9
251) What is character constant in C++?
252) How are non graphic characters represented in C++?
253) Write the following real constants into exponent form:
i) 32.179 ii) 8.124 iii) 0.00007
254) Write the following real constants in fractional form:
i) 0.23E4 ii) 0.517E-3 iii) 0.5E-5
255) What is the significance of null (\0) character in a string?
256) What is the use of operators?
257) What are binary operators? Give examples of arithmetic binary operators.
258) What does the modulus operator % do?
259) What will be the result of 8.5 % 2?
260) Give that i = 8, j = 10, k = 8, What will be result of the following expressions? (i) i < k (ii) i < j (iii) i > = k (iv) i = = j (v) j ! = k
261) What will be the order of evaluation for the following expressions? (i) i + 3 > = j - 9 (ii) a +10 < p - 3 + 2 q
262) Write an expression involving a logical operator to test, if marks are 75 and grade is 'A'.
263) What do you mean by fundemantal data types?
264) The data type char is used to represent characters. then why is it often termed as an integer type?
265) What is the advantage of floating point numbers over integers?
266) The data type double is another floating point type. Why is it treated as a distinct data type?
267) What is the use of void data type?
268) What are modifiers? What is the use of modifiers?
269) What is wrong with the following C++ statement:
long float x;

270) What is a variable ? Why is a variable called symblolic variable?
271) What do you mean by dynamic initialization of a variable? Give an exmple.
272) What is wrong with the following statement?
const int x;
273) What is meant by type conversion?
274) How implicit conversion is different from explicit conversion?
275) What is the difference between endl and \n?
276) What is the use of references?
277) What is the use of setprecision ( ) ?
278) What is a null statement and compound statement?
279) What is selection statement? write it's types?
280) What is the output of the following code?
for (int i = 2; i < = 10 ; i + = 2)
cout < < i;
281) Write a for loop that displays the number from 21 to 30.
282) Write a while loop that displays numbers 2, 4, 6, 8.....20.
283) Compare an if and a?: operator.
284) Define Functions.
285) Write about strlen() function.
286) What are importance of void data type.
287) What is Parameter and list its types?
288) Write a note on Local Scope.
289) What is Traversal in an Array?
290) What is Strings?
291) What is the syntax to declare two – dimensional array.
292) Define structure .What is its use?
293) What is the error in the following structure definition.
struct employee{ inteno;charename[20];char dept;}
Employee e1,e2;
294) How is modular programming different from procedural programming paradigm?
295) Differentiate classes and objects.
296) What is polymorphism?
297) How is encapsulation and abstraction are interrelated?
298) Write the disadvantages of OOP.
299) What are called members?
300) Differentiate structure and class though both are user defined data type.
301) What is the difference between the class and object in terms of oop?
302) Why it is considered as a good practice to define a constructor though compiler can automatically generate a constructor?
303) Write down the importance of destructor.
304) What is function overloading?
305) List the operators that cannot be overloaded.
306) class add{int x; public: add(int)}; Write an outline definition for the constructor.
307) Does the return type of a function help in overloading a function?
308) What is the use of overloading a function?
309) What is inheritance?
310) What is a base class?
311) Why derived class is called power packed class?

312) In what multilevel and multiple inheritance differ though both contains many base class?
313) What is the difference between public and private visibility mode?
314) What is harvesting?
315) What are Warez?
316) Write a short note on cracking.
317) Write two types of cyber attacks.
318) What is a Cookie?
319) List the search engines supported by Tamil language.
320) What are the keyboard layouts used in Android?
321) Write a short note about Tamil Programming Language.
322) What is TSCII?
323) Write a short note on Tamil Virtual Academy.

126 x 3 = 378

324) What are the characteristics of a computer?
325) Write the applications of computer
326) What is an input device? Give two examples.
327) Name any three output devices.
328) Differentiate optical and Laser mouse.
329) Write short note on impact printer.
330) Write the characteristics of sixth generation.
331) Write the significant features of monitor.
332) Write note on binary number System
333) Convert $(150)_{10}$ into Binary, then convert that Binary number to Octal.
334) Write short note on ISCII.
335) Add:
(i) $-22_{10} + 15_{10}$
(ii) $20_{10} + 25_{10}$
336) Write the truth table of fundamental gates
337) Write a short note on XNOR gate.
338) Reason out why the NAND an NOR are called universal gates?
339) Give the truth table of XOR gate
340) Write the De Morgan's law.
341) What is radix of a number system? Give example
342) Perform the following binary computations $10_{10} + 15_{10}$
343) Perform the following binary computations $\mathbf{-12_{10} + 5_{10}}$
344) Perform the following binary computations $\mathbf{(-2_{10}) - (-6_{10})}$
345) Perform Binary addition for the following: $23_{10} + 12_{10}$
346) Subtract $1001010_2 - 10100_2$
347) Perform binary addition for the following: $(-21)_{10} + (5)_{10}$
348) Identify the number system for the following numbers

S. No.	Number	Number system
1	$(1010)_{10}$	Decimal Number system
2	$(1010)_2$	
3	$(989)_{16}$	
4	$(750)_8$	
5	$(926)_{10}$	

349) State whether the following numbers are valid or not. If invalid, give reason.

S.No.	Statement	Yes / No	Reason (If invalid)
1.	786 is an Octal number		
2.	101 is a Binary number		
3.	Radix of Octal number is 7		

350) Convert the following Decimal numbers to its equivalent Binary, Octal, Hexadecimal.
1) 1920
2) 255
3) 126

351) Convert the given Binary number into its equivalent Decimal, Octal and Hexadecimal number.
1) 101110101
2) 1011010
3) 101011111

352) Differentiate Computer Organization from Computer Architecture.
353) Classify the microprocessor based on the size of the data .
354) Write down the classifications of microprocessors based on the instruction set.
355) Differentiate PROM and EPROM
356) Write down the interfaces and ports available in a computer.
357) Differentiate CD and DVD.
358) How will you differentiate a flash memory and an EEPROM?
359) What are the advantages and disadvantages of Time-sharing features?
360) List out the key features of Operating system.
361) Write a note on Multiprocessing.
362) Write a note on Recycle bin.
363) What are the functions of Windows Operating system.
364) Write a note on the elements of a window.
365) Write the two ways to create a new folder.
366) Differentiate copy and move.
367) When do you say that a problem is algorithmic in nature?
368) What is the format of the specification of an algorithm?
369) What is abstraction?
370) How is state represented in algorithms?
371) What is the form and meaning of assignment statement?
372) What is the difference between assignment operator and equality operator?
373) Add two numbers:
374) Consider the well-known Goat, grass and wolf problem:
375) Consider The Chameleons of Chromeland problem:
376) State:
377) Suppose we want to calculate the surface area of a cylinder of radius r and height h.

378) Write the specification of an algorithm to compute the quotient and remainder after dividing an integer A by another integer B. For example,
divide (22, 5) = 4, 2
divide (15, 3) = 5 , 0
Let A and B be the input variables. We will store the quotient in a variable q and the remainder in a variable r. So q and r are the output variables.
What are the properties of the inputs A and B?

379) Write the specification of an algorithm for computing the square root of a number.

380) Consider the specification of the algorithm square_root.

381) A map is an abstraction of the things we find on the ground. We do not represent every detail on the ground.

382) In medicine, different specialists work with different abstractions of human body. An orthopaedician works with the abstraction of skeletal system, while a gastroenterologist works with digestive system. A physiotherapist abstracts the human body by its muscular system.

383) Chocolate Bars: A rectangular chocolate bar is divided into squares by horizontal and vertical grooves. We wish to break the bar into individual squares.
To start with, we have the whole of the bar as a single piece. A cut is made by choosing a piece and breaking it along one of its grooves. Thus a cut divides a piece into two pieces. How many cuts are needed to break the bar into its individual squares?

384) Consider Example 6.2, Goat, grass and wolf problem. In this example, we will write a specification of the problem. We will solve it in Example 7.1. The problem involves four individuals, and each is at one of the two sides of the river. This means that we can represent the state by four variables, and each of them has one of the two values. Let us name the variables as farmer, goat, grass and wolf, and their possible values L and R. A value of L means "at the left side". A value of R means "at the right side". Since the boat is always with the farmer, it is not important to introduce a variable to represent its position.

385) In Example 6.11, we abstracted the state of the process by two variables p and c. The next step is to model the process of cutting the chocolate bar. When we make a single cut of a piece, the number of pieces (p) and the number of cuts (c) both increase by 1. We can model it by an assignment statement.

386) If C is false in line 2, trace the control flow in this algorithm.

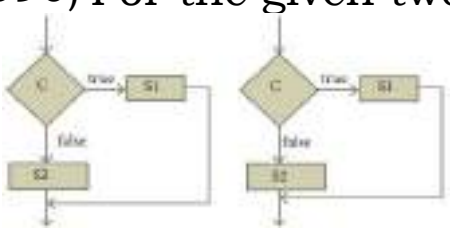
```
1 S1
2 -- C is false
3 if C
4 S2
5 else
6 S3
7 S4
```

387) What is case analysis?

388) Draw a flowchart for -3 case analysis using alternative statements.

389) Define a function to double a number in two different ways:
(1) n + n,
(2) 2 x n.

390) For the given two flowcharts write the pseudo code.



391) There are 7 tumblers on a table, all standing upside down. You are allowed to turn any 2 tumblers simultaneously in one move. Is it possible to reach a situation when all the tumblers are right side up? (Hint: The parity of the number of upside-down tumblers is invariant.)

392) A knockout tournament is a series of games. Two players compete in each game; the loser is knocked out (i.e. does not play anymore), the winner carries on. The winner of the tournament is the player that is left after all other players have been knocked out. Suppose there are 1234 players in a tournament. How many games are played before the tournament winner is decided?

393) Show that p - c is an invariant of the assignment. P, C : = P + 1, C + 1

394) Consider two variable m and n under the assignment m, n : = m + 3, n - 1. Is the expression m + 3n an invariant?

395) King Vikramaditya has two magic swords. With one, he can cut off 19 heads of a dragon, but after that the dragon grows 13 heads. With the other sword, he can cut off 7 heads, but 22 new heads grow. If all heads are cut off, the dragon dies. If the dragon has originally 1000 heads, can it ever die? (Hint: The number of heads mod 3 is invariant.)

396) Suppose the following assignment is executed with (u, v) = (20,15). We can annotate before and after the assignment.
-- before: u, v = 20, 15
u, v :=u+5,v-5
-- after: u, v = 25, 10
After assignment (u, v) = (25, 10). But what do you observe about the value of the function u + v?

397) If we execute the following assignment with (p, c = 10, 9), after the assignment, (p, c) = (11, 10).
-- before : p, c = 10 , 9
p, c := p + 1, c+1
-- after: p, c = 11 , 10
Can you discover an invariant? What is the value of p - c before and after?

398) Design an iterative algorithm to compute a^n, Let us name the algorithm power(a, n). For example,
power(10, 4) = 10000
power (5, 3) = 125
power (2, 5) = 32
Algorithm power (a, n) computes a^n by multiplying a cumulatively n times.

The specification and the loop invariant are shown as comments.

399) Recall the Chocolate bar problem of Example 6.11. How many cuts are needed to break the bar into its individual squares?

400) Consider the Chameleons of Chromeland of Example 6.3. There are 13 red, 15 green, and 17 blue chameleons on Chromeland. When two chameleons of different colors meet they both change their color to the third one (for example, if a red and a green meet, both become blue). Is it possible to arrange meetings that result in all chameleons displaying blue color?

401) Jar of marbles: You are given a jar full of two kinds of marbles, white and black, and asked to play this game. Randomly select two marbles from the jar. If they are the same color, throw them out, but put another black marble in (you may assume that you have an endless supply of spare marbles). If they are different colors, place the white one back into the jar and throw the black one away. If you knew the original numbers of white and black marbles, what is the color of the last marble in the jar?

402) Describe the differences between keywords and identifiers?

403) Is C++ case sensitive? What is meant by the term “case sensitive”?

404) Differentiate “=” and “==”.

405) What is the use of a header file?

406) Why is main function special?

407) What are arithmetic operators in C++? Differentiate unary and binary arithmetic operators. Give example for each of them.

408) How relational operators and logical operators are related to one another?

409) Evaluate the following C++ expressions where x, y, z are integers and m, n are floating point numbers. The value of x = 5, y = 4 and m=2.5;
(i) n = x + y / x;
(ii) z = m * x + y;
(iii) z *= x * m + x;

410) Convert the following if-else to a single conditional statement:
```
if (x > = 10)
a = m + 5;
else
a = m;
```

411) Rewrite the following code so that it is functional:
```
v = 5;
do;
{
total += v;
cout < < total;
while v < = 10
```

412) Write a C++ program to print multiplication table of a given number.

413) Write the syntax and purpose of switch statement.

414) Write a short program to print following series:
(a) 1 4 7 10..... 40

415) What is Built-in functions?

416) What is the difference between isupper() and toupper() functions?

417) Write about strcmp() function.

418) Write short note on pow() function in C++.

419) What are the information the prototype provides to the compiler?

420) What is default arguments? Give example.

421) Define an Array? What are the types?

422) Write note an Array of strings

423) The following code sums up the total of all students name starting with 'S' and display it.Fill in the blanks with required statements.
```
struct student {int exam no,lang,eng,phy,che,mat,csc,total;char name[15];};
int main()
{
student s[20];
for(int i = 0; i < 20; i ++)
{
..... //accept student details
}
for(int i = 0; i < 20; i ++)
{
..... //check for name starts with letter "S"
..... // display the detail of the checked name
}
return 0;
}
```

424) How to access members of a structure? Give example.

425) What is called anonymous structure. Give an example

426) What is paradigm? Mention the different types of paradigm.

427) Write a note on the features of procedural programming.

428) List some of the features of modular programming.

429) What do you mean by modularization and software reuse?

430) Define information hiding.

431) Rewrite the following program after removing the syntax errors if any and underline the errors:

```
#include
$include
class mystud
{ int studid =1001;
char name[20];
public
mystud( ) {}
void register ( )
{cin > > stdid; gets(name); }
void display ( )
{cout< < studid< < ": "< < name< < endl;}
}
int main( )
{ mystud MS;
register.MS( );
MS.display( );
}
```

432) Write with example how will you dynamically initialize objects?

433) What are advantages of declaring constructors and destructor under public accessability?

434) Given the following C++ code, answer the questions (i) & (ii).

```
class TestMeOut
{
public:
~TestMeOut() //Function 1
{cout< < "Leaving the exam hall"< < endl;}
TestMeOut() //Function 2
{cout< < "Appearing for exam"< < endl;}
void MyWork() //Function 3
{cout< < "Answering"< < endl;} };
```

(i) In Object Oriented Programming, what is Function 1 referred as and when doesit get invoked / called ?

(ii) In Object Oriented Programming, what is Function 2 referred as and when doesit get invoked / called ?

435) What are the rules for function overloading?

436) How does a compiler decide as to which function should be invoked when there are many functions? Give an example.

437) What is operator overloading? Give some example of operators which can be overloaded.

438) Discuss the benefits of constructor overloading?

439) class sale (int cost, discount ;public: sale(sale &); Write a non inline definition for constructor specified;

440) What are the points to be noted while deriving a new class?

441) What is difference between the members present in the private visibility mode and the members present in the public visibility mode

442) What is the difference between polymorphism and inheritance though are used for reusability of code?

443) What do you mean by overriding?

444) Write some facts about the execution of constructors and destructors in inheritance.

445) What is the role of firewalls?

446) Write about encryption and decryption.

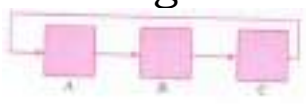
447) Explain about proxy server.
448) What are the guidelines to be followed by any computer user?
449) What are ethical issues? Name some.

85 x 5 = 425

450) Explain the basic components of a computer with a neat diagram.
451) Discuss the various generations of computers.
452) Explain the following:
 a. Inkjet Printer
 b. Multimedia projector
 c. Bar code / QR code Reader
453) Write the procedure to convert fractional Decimal to Binary.
454) Convert $(98.46)_{10}$ to Bianary.
455) Find 1's Complement and 2's Complement for the following Decimal number.
 (i) -98
 (ii) -135
456) Add $1101010_2 + 101101_2$
457) Subtract $1101011_2 - 111010_2$
458) Explain the fundamental gates with expression and truth table.
459) How AND and OR can be realized using NAND and NOR gate
460) Explain the Derived gates with expression and truth table.
461) State whether the following numbers are valid or not. If invalid, given reason.
 1. 786 is an octal number
 2. 101 is a binary number
 3. radix of octal number is 7
462) Explain the characteristics of a microprocessor.
463) How the read and write operations are performed by a processor? Explain.
464) Arrange the memory devices in ascending order based on the access time.
465) Explain the types of ROM.
466) Explain the concept of a Distributed Operating System along with its advantages.
467) List out the points to be noted while creating a user interface for an Operating system.
468) Explain the process management algorithms in Operating System.
469) Explain the versions of Windows Operating System.
470) Explain the different ways of finding a file or Folder.
471) Write the procedure to create shortcut in Windows OS.
472) Write the specification of an algorithm hypotenuse whose inputs are the lengths of the two shorter sides of a right angled triangle, and the output is the length of the third side.
473) Suppose you want to solve the quadratic equation $ax^2 + bx + c = 0$ by an algorithm.
 quadratic_solve (a, b, c)
 -- inputs : ?
 -- outputs: ?
 You intend to use the formula and you are prepared to handle only real number roots. Write a suitable specification.
 $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
474) Exchange the contents: Given two glasses marked A and B. Glass A is full of apple drink and glass B is full of grape drink. For exchanging the contents of glasses A and B, represent the state by suitable variables, and write the specification of the algorithm.
475) What are the values of variables m and n after the assignments in line (1) and line (3)?

476) Exchange the contents: Given two glasses marked A and B. Glass A is full of apple drink and glass B is full of grape drink. Write the specification for exchanging the contents of glasses A and B, and write a sequence of assignments to satisfy the specification.

477) Circulate the contents: Write the specification and construct an algorithm to circulate the contents of the variables A, B and C as shown below: The arrows indicate that B gets the value of A, C gets the value of B and A gets the value of C.



478) Decanting problem. You are given three bottles of capacities 5, 8 and 3 litres. The 8L bottle is filled with oil, while the other two are empty. Divide the oil in 8L bottle into two equal quantities. Represent the state of the process by appropriate variables. What are the initial and final states of the process? Model the decanting of oil from one bottle to another by assignment. Write a sequence of assignments to achieve the final state.

479) Trace the step-by-step execution of the algorithm for factorial(4).

```
factorial(n)
--inputs: n is an integer, n > 0
-- outputs: f = n!
f, i := 1 ,1
while i < nf
, i := f × i, i+1
```

480) Let us solve the Farmer, Goat, Grass, and Wolf problem of Example 6.12. We decided to represent the state of the process by four variables farmer, goat, grass, and wolf, representing the sides of the farmer, goat, grass and wolf, respectively. In the initial state, all four variables have the value L (Left side). In the final state, all four variables should have the value R (Right side). The goal is to construct a statement S so as to move from the initial state to the final state.

481) Minimum of two numbers: Given two numbers a and b, we want to find the minimum of the two using the alternative statement. Let us store the minimum in a variable named result.

482) We want an algorithm that compares two numbers and produces the result as compare

$$(a, b) = \begin{cases} 1- & \text{if } a < b \\ 0 & \text{if } a = b \\ 1 & \text{if } a > b \end{cases}$$

We can split the state into an exhaustive set of 3 disjoint cases: a < b, a = b, and a > b. Then we can define compare() using a case analysis.

483) Construct an iterative algorithm to compute the quotient and remainder after dividing an integer A by another integer B.

484) In the Chameleons of Chromeland problem of Example 1.3, suppose two types of chameleons are equal in number. Construct an algorithm that arranges meetings between these two types so that they change their color to the third type. In the end, all should display the same color.

485) Consider a school goer's action in the morning. The action can be written as

1 Get ready for school

We can decompose this action into smaller, more manageable action steps which she takes in sequence:

1 Eat breakfast
2 Put on clothes
3 Leave home

486) Consider the problem of testing whether a triangle is right-angled, given its three sides a, b, c, where c is the longest side. The triangle is right-angled, if $c^2 = a^2 + b^2$

487) Power can also be defined recursively as

$$a^n = \begin{cases} 1 & \text{if n} = 0 \\ \text{a} \times \text{a}^{\text{n}-1} & \text{if n is odd} \\ \text{a}^{\text{n}/2} \times \text{a}^{\text{n}/2} & \text{if n is even} \end{cases}$$

Construct a recursive algorithm using this definition. How many multiplications are needed to calculate a^{10}?

488) There are 6 equally spaced trees and 6 sparrows sitting on these trees,one sparrow on each tree. If a sparrow flies from one tree to another, then at the same time, another sparrow flies from its tree to some other tree the same distance away, but in the opposite direction. Is it possible for all the sparrows to gather on one tree?

489) Customers are waiting in a line at a counter. The man at the counter wants to know how many customers are waiting in the line.

490) Assume an 8 × 8 chessboard with the usual coloring. "Recoloring" operation changes the color of all squares of a row or a column. You can recolor re-peatedly. The goal is to attain just one black square. Show that you cannot achieve the goal. (Hint: If a row or column has b black squares, it changes by (|8 - b) - b|).

491) A single-square-covered board is a board of 2^n x 2^n squares in which one square is covered with a single square tile. Show that it is possible to cover the this board with triominoes without overlap.

492) Design a recursive algorithm to compute a^n, We constructed an iterative algorithm to compute a^n in Example 8.5. a^n can be defined recursively as

$$a^n = \begin{cases} 1 & \text{if n} = 0 \\ a^n \times a^{n-1} & \text{otherwise} \end{cases}$$

493) Write about Binary operators used in C++.

494) What are the types of Errors?

495) Explain control statement with suitable example.

496) What is an entry control loop? Explain any one of the entry controlled loop with suitable example.

497) Write a program to find the LCM and GDC of two numbers.

498) Write programs to find the sum of the following series:

(a) $x - \frac{x^2}{2!} + \frac{x^3}{3!} - \frac{x^4}{4!} + \frac{x^5}{5!} - \frac{x^6}{6!}$

(b) $x + \frac{x^2}{2} + \frac{x^3}{3} + \ldots + \frac{x^n}{n}$

499) Write a program to find sum of the series
S = 1 + x + x^2 +..... + x^n

500) Explain Call by value method with suitable example.

501) What is Recursion? Write a program to find the factorial of the given number using recursion.

502) What are the different forms of function return? Explain with example.

503) Explain scope of variable with example.

504) Write a program to accept any integer number and reverse it.

505) Write a C++ program to find the difference between two matrix.

506) Write a C++ program to add two distances using the following structure definition

```
struct Distance{
int feet;
float inch;
}d1 , d2, sum;
```

507) Write the output of the following c++ program

```
#include< iostream >
#include< stdio >
#include < string >
#include< conio >
using namespace std;
struct books {
char name[20], author[20];
} a[2];
int main()
{ cout< < "Details of Book No " < < 1 < < "\n";
cout< < "----------------------\n";
cout< < "Book Name :"< < strcpy(a[0].name,"Programming ")< < endl;
cout< < "Book Author :"< < strcpy(a[0].author,"Dromy")< < endl;
cout< < "\nDetails of Book No " < < 2 < < "\n";
cout< < "----------------------\n";
cout< < "Book Name :"< < strcpy(a[1].name,"C++programming" )< < endl;
cout< < "Book Author :"< < strcpy(a[1].author,"BjarneStroustrup ")< < endl;
cout< < "\n\n";
cout< < "================================================\n";
cout< < " S.No\t| Book Name\t|author\n";
cout< < "================================================";
for (int i = 0; i < 2; i++) {
cout< < "\n " < < i + 1 < < "\t|" < < a[i].name < < "\t| " < < a[i].author;
}
cout< < "\n================================================";
return 0;
}
```

508) Write the output of the following c++ program

```
#include < iostream >
#include < string >
using namespace std;
struct student
{
introll_no;
char name[10];
long phone_number;
};
int main(){
student p1 = {1,"Brown",123443},p2;
p2.roll_no = 2;
strcpy(p2.name ,"Sam");
p2.phone_number = 1234567822;
cout< < "First Student" < < endl;
cout< < "roll no : " < < p1.roll_no < < endl< < "name : " < < p1.name < < endl;
cout< < "phone no : " < < p1.phone_number < < endl;
cout< < "Second Student" < < endl;
cout< < "roll no : " < < p2.roll_no < < endl< < "name : " < < p2.name < < endl;
cout< < "phone no : " < < p2.phone_number < < endl;
return 0;
}
```

509) Debug the error in the following program

```
#include < istream.h >
structPersonRec
{
charlastName[10];
chaefirstName[10];
int age;
}
PersonRecPeopleArrayType[10];
void main()
{
PersonRecord people;
for (i = 0; i < 10; i++)
{
cout< < people.firstName< < ‘ ‘ < < people.lastName < < people.age;
}
for (int i = 0; i < 10; i++)
{
cout< < "Enter first name: "; cin< < peop[i].firstName;
cout< < "Enter last name: "; cin > > peop[i].lastName;
cout< < "Enter age: "; cin > > people[i].age;}
}
```

510) Write the differences between Object Oriented Programming and procedural programming

511) What are the advanatges of OOPs?

512) Write a note on the basic concepts that suppors OOPs?

513) Mention the differences between constructor and destructor.

514) Define a class RESORT with the following description in C++ :

Private members:

Rno // Data member to store room number

Name //Data member to store user name

Charges //Data member to store per day charge

Days //Data member to store the number of days

Compute ( ) /* A function to calculate total amount as Days * Charges and if the total amount exceeds 11000 then total amount is 1.02 * Days *Charges */

Public member:

GetInfo( ) /* Function to Read the information like name, room no, charges and days */

DispInfo ( ) /* Function to display all entered details and total amount calculated using COMPUTE function */

515) Write the output of the following

```
#include < iostream.h >
using namespace std;
class student
{
int rno, marks;
public:
student(int r,int m)
{ cout< < "Constructor " < < endl;
rno=r;
marks=m;
}
void printdet()
{
marks=marks+30;
cout< < "Name: Bharathi"< < endl;
cout< < "Roll no : "< < rno< < "\n";
cout< < "Marks : "< < marks< < endl;
}
};
int main()
{
student s(14,70);
s.printdet();
cout< < "Back to Main";
return 0;
}
```

516) What are the rules for operator overloading?

517) Answer the question (i) to (v) after going through the following class.

```
classBook
{
intBookCode ; char Bookname[20];float fees;
public:
Book( ) //Function 1
{
fees=1000;
BookCode=1;
strcpy (Bookname,"C++");
}
void display(float C) //Function 2
{ cout< < BookCode< < ":"< < Bookname< < ":"< < fees< < endl; }
~Book( ) //Function 3
{ cout< < "End of Book Object"< < endl; }
Book (intSC,char S[ ],float F) ; //Function 4
};
```

(i) In the above program, what are Function 1 and Function 4 combined together referred as?
(ii) Which concept is illustrated by Function3? When is this function called/ invoked?
(iii) What is the use of Function3?
(iv) Write the statements in main to invoke function1 and function2
(v) Write the definition for Function4.

518) Write the output of the following program

```
include < iostream >
using namespace std;
class Seminar
{
int Time;
public:
Seminar()
{
Time=30;cout < < "Seminar starts now"< < endl; }
void Lecture()
{
cout < < "Lectures in the seminar on"< < endl; }
Seminar(int Duration)
{
Time=Duration;cout < < "Welcome to Seminar "< < endl; }
Seminar(Seminar &D)
{
Time=D.Time;cout < < "Recap of Previous Seminar Content "< < endl; }
~Seminar()
{
cout < < "Vote of thanks"< < endl; }
};
int main()
{
Seminar s1,s2(2),s3(s2);
s1.Lecture();
return 0;
}
```

519) Answer the questions based on the following program

```
#include < iostream >
#include < string.h >
using namespace std;
class comp {
public:
char s[10];
void getstring(char str[10])
{
strcpy(s,str);
}
void operator==(comp);
};
void comp::operator==(comp ob)
{
if(strcmp(s,ob.s)==0)
cout < < "\nStrings are Equal";
else
cout < < "\nStrings are not Equal";
}
int main()
{
comp ob, ob1;
char string1[10], string2[10];
cout < < "Enter First String:";
cin > > string1;
ob.getstring(string1);
cout < < "\nEnter Second String:";
cin > > string2;
ob1.getstring(string2);
ob==ob1;
return 0;
}
```

(i) Mention the objects which will have the scope till the end of the program.
(ii) Name the object which gets destroyed in between the program
(iii) Name the operator which is over loaded and write the statement that invokes it.
(iv) Write out the prototype of the overloaded member function
(v) What types of operands are used for the overloaded operator?
(vi) Which constructor will get executed? Write the output of the program.

520) Explain the different types of inheritance.

521) Explain the different visibility mode through pictorial representation.

522) Consider the following c++ code and answer the questions

```
class Personal
{
int Class,Rno;
char Section;
protected:
char Name[20];
public:
personal();
void pentry();
voidPdisplay();
};
class Marks:private Personal
{
float M{5};
protected:
char Grade[5];
public:
Marks();
void M entry();
void M display();
};
class Result:public Marks
{
float Total,Agg;
public:
char FinalGrade, Commence[20];
Result();
void R calculate();
void R display();
}:
```

(i) Which type of Inheritance is shown in the program?

523) Write the output of the following program

```
#include< iostream >
using namespace std;
class A
{
protected:
int x;
public:
void show()
{
cout< < "x = "< < x< < endl;}
A()
{
cout< < endl< < " I am class A "< < endl;}
~A( )
{
cout< < endl< < " Bye ";} };
};
class B : public A
{
protected:
int y;
public:
B(int x, int y)
{ x = x1;
y = y1; }
B( )
{
cout< < endl< < " I am class B "< < endl; }
~B( )
{
cout< < endl< < " Bye "; }
void show( )
{
cout< < "x = "< < x< < endl;
cout< < "y = "< < y< < endl; }
};
int main( )
{
A objA;
B objB(30, 20);
objB.show( );
return 0;
}
```

524) Debug the following program

```
%include(iostream.h)
#include
class A()
{ public;
int a1,a2:a3;
void getdata[]
{ a1=15; a2=13; a3=13; } }
class B:: public A()
{ PUBLIC
voidfunc()
{ int b1:b2:b3;
A::getdata[];
b1=a1;
b2=a2;
a3=a3;
cout< < b1< < ’\t’< < b2< < ’t\’< < b3; }
void main()
{ B der;
der1:func(); }
```

525) Consider the following c++ code and answer the questions

```
class Personal
{
int Class,Rno;
char Section;
protected:
char Name[20];
public:
personal();
void pentry();
void Pdisplay(); };
class Marks:private Personal
{ float M{5};
protected:
char Grade[5];
public:
Marks();
void Mentry();
void Mdisplay(); };
class Result:public Marks
{
float Total,Agg;
public:
char FinalGrade, Commence[20];
Result();
void Rcalculate();
void Rdisplay();
};
```

(ii) Specify the visibility mode of base classes.

526) Consider the following c++ code and answer the questions

```
class Personal
{
int Class,Rno;
char Section;
protected:
char Name[20];
public:
personal();
void pentry();
void Pdisplay(); };
class Marks:private Personal
{ float M{5};
protected:
char Grade[5];
public:
Marks();
void Mentry();
void Mdisplay(); };
class Result:public Marks
{
float Total,Agg;
public:
char FinalGrade, Commence[20];
Result();
void Rcalculate();
void Rdisplay();
};
```

(iii) Give the sequence of Constructor/Destructor Invocation when object of class author is created.

527) Consider the following c++ code and answer the questions

```
class Personal
{
int Class,Rno;
char Section;
protected:
char Name[20];
public:
personal();
void pentry();
void Pdisplay(); };
class Marks:private Personal
{ float M{5};
protected:
char Grade[5];
public:
Marks();
void Mentry();
void Mdisplay(); };
class Result:public Marks
{
float Total,Agg;
public:
char FinalGrade, Commence[20];
Result();
void Rcalculate();
void Rdisplay();
};
```

(iv) Name the base class(/es) and derived class (/es).

528) Consider the following c++ code and answer the questions

```
class Personal
{
int Class,Rno;
char Section;
protected:
char Name[20];
public:
personal();
void pentry();
void Pdisplay(); };
class Marks:private Personal
{ float M{5};
protected:
char Grade[5];
public:
Marks();
void Mentry();
void Mdisplay(); };
class Result:public Marks
{
float Total,Agg;
public:
char FinalGrade, Commence[20];
Result();
void Rcalculate();
void Rdisplay();
};
```

(v) Give number of bytes to be occupied by the object of the following class:

(a) publisher

(b) branch

(c) author.

529) Consider the following c++ code and answer the questions

```
class Personal
{
int Class,Rno;
char Section;
protected:
char Name[20];
public:
personal();
void pentry();
void Pdisplay(); };
class Marks:private Personal
{ float M{5};
protected:
char Grade[5];
public:
Marks();
void Mentry();
void Mdisplay(); };
class Result:public Marks
{
float Total,Agg;
public:
char FinalGrade, Commence[20];
Result();
void Rcalculate();
void Rdisplay();
};
```

(vi) Write the names of data members accessible from the object of class Result.

530) Consider the following c++ code and answer the questions

```
class Personal
{
int Class,Rno;
char Section;
protected:
char Name[20];
public:
personal();
void pentry();
void Pdisplay(); };
class Marks:private Personal
{ float M{5};
protected:
char Grade[5];
public:
Marks();
void Mentry();
void Mdisplay(); };
class Result:public Marks
{
float Total,Agg;
public:
char FinalGrade, Commence[20];
Result();
void Rcalculate();
void Rdisplay();
};
```

(vii) Write the names of all member functions accessible from the object of class Result

531) Consider the following c++ code and answer the questions

```
class Personal
{
int Class,Rno;
char Section;
protected:
char Name[20];
public:
personal();
void pentry();
void Pdisplay(); };
class Marks:private Personal
{ float M{5};
protected:
char Grade[5];
public:
Marks();
void Mentry();
void Mdisplay(); };
class Result:public Marks
{
float Total,Agg;
public:
char FinalGrade, Commence[20];
Result();
void Rcalculate();
void Rdisplay();
};
```

(viii) Write the names of all members accessible from member functionsof class Result

532) What are the various crimes happening using computer?

533) What is piracy? Mention the types of piracy? How can it be prevented?

534) Write the different types of cyber attacks.

****