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ICO INTERNATIONAL CYBER OLYMPIAD	NISO NATIONAL INTERACTIVE SCIENCE OLYMPIAD	NIMO NATIONAL INTERACTIVE MATHS OLYMPIAD	NBTO NATIONAL BIOTECHNOLOGY OLYMPIAD	IEO INTERNATIONAL ENGLISH OLYMPIAD	IGO INTERNATIONAL G.K. OLYMPIAD
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Level - 1 : Level-1 winners will get certificate, aptitude report, medals for the school toppers and online subscription.

Level - 2 : Top 10 % including school toppers will be selected for level-2-National level - online computer based interactive test held at exam centres all over India. Besides selection for level-3, winner will get merit certificate, aptitude report, medals, Mp3 player, watches, educational CDs, laptop, scholarship, online subscription etc.

Level - 3 : Top 1% will qualify for level 3-International level-where you will compete with students globally. Get selected for EHF's International Olympiad training camp. Only Indian organization giving students exposure to global competitions. Represent India & win laurels. Guidance by top scientists.

Prizes ranges from cash (millions of \$), gadgets, foreign trips, publicity, fame, scholarships, Internships, conference participation and more.

- You are allowed additional 10 minutes to fill the required details in the **RESPONSE SHEET**.
- The question paper is made as per syllabus guidelines & pattern given in the information Booklet. The Question Paper for Classes 1 to 6 contains 25 Questions each to be answered in 40 minutes. The Question paper for classes 7 to 12 contains 50 Questions each to be answered in 60 minutes. All questions are compulsory. Further instructions are given in the instruction letter to the coordinator teacher.
- Use the response sheet to mark your responses by darkening the required circle. The response sheet has to be returned to the foundation, duly filled in. The student can retain the Question Paper.

INTERNATIONAL CYBER OLYMPIAD

ICO

12 Class **A1** Paper Code

LEVEL - 1

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THE HARVARD - IIT MATHEMATICS TORNAAMENT

ORACLE ThinkQuest EDUCATION FOUNDATION

SECTION -A : MENTAL ABILITY

- A is two years older than B who is twice as old as C. If the total of the ages of A, B and C is 27, then how old is B ?
 - 8
 - 9
 - 10
 - None of these
- If selling price is doubled, the profit triples. Find the profit percent.
 - $66\frac{2}{3}$
 - 100
 - $105\frac{1}{3}$
 - None of these
- If $a - b = 3$ and $a^2 + b^2 = 29$, find the value of ab .
 - 10
 - 12
 - 15
 - None of these
- ___ aba ___ cabc ___ dcba ___ bab ___ a
 - abdca
 - bcadc
 - abcd
 - None of these

- Sitting in a row in front of a camera, Mr. X is on the left of the person sitting in the centre but is on the right of Mr. Y. Mr. P is on the right of Mr. Z and Mr. R is on the right of Mr. P. Mr. R is the second person from the person sitting in the centre. Who is the person sitting in the centre?

- Mr. X
- Mr. Z
- Mr. Y
- None of these

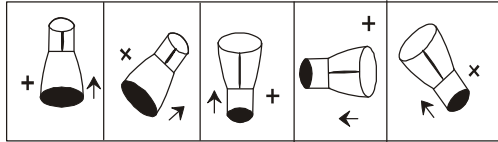
- If the height of a triangle is decreased by 40% and its base is increased by 40%, what will be the effect on its area?

- 16% decrease
- 16% increase
- 8% increase
- None of these

- Insert the missing number



- 32
- 16
- 4
- None of these

8. How many numbers from 11 to 50 are exactly divisible by 7 but not by 3 ?
- (1) Two (2) Four
(3) Five (4) None of these
9. Choose the figure which is different from the rest in the given series
- 
- (1) 2 (2) 3
(3) 4 (4) None of these
10. 3 pumps, working 8 hours a day, can empty a tank in 2 days. How many hours a day must 4 pumps work to empty the tank in day ?
- (1) 10 (2) 12
(3) 11 (4) None of these

SECTION B : GENERAL COMPUTER

11. Which of the following terms is used for computers that are attached to a network?
- (1) Server (2) Host
(3) Node (4) None of these
12. Which of the following command is used for getting the IP address of a computer?
- (1) Ping (2) ipconfig
(3) cd (4) None of these
13. In the www.google.com URL, which of the following part represents the name of a website?
- (1) WWW (2) Com
(3) Google (4) None of these
14. The installation of IBM 370 represents the example of which of the following topologies ?
- (1) Ring (2) Star
(3) Bus (4) None of these
15. In which topology, terminators are required at the end of the lines?
- (1) Ring (2) Star
(3) Bus (4) None of these
16. Identify the odd one?
- (1) Twisted Pair cables (2) Co-axial cables
(3) Fiber optic cables (4) None of these
17. Which of the following is a kind of software that is distributed and used freely but only for a specified trial period ?
- (1) Freeware (2) Shareware
(3) OSS (4) None of these
18. Who is making the web standards ?
- (1) Microsoft (2) Netscape
(3) The World Wide Web Consortium
(4) None of these
19. While working with MS-DOS, which command is used to restore files that were backed up using the BACKUP command ?
- (1) DISKCOPY (2) RESTORE
(3) STORE (4) None of these.
20. Which command is used to count the total number of lines, words, and characters contained in a file ?
- (1) countw (2) wcount
(3) wc (4) None of these.
21. Which command is used with vi editor to delete a single character ?
- (1) x (2) y
(3) a (4) None of these
22. Which device prevents power interruptions, resulting in corrupted data ?
- (1) Battery back-up unit (2) Surge protector
(3) Multiple SIMMs strips (4) None of these.
23. What allows you to print on both sides of the printer ?
- (1) Fuser (2) Duplexer
(3) Toner cartridge (4) None of these
24. Which are the three main search expressions or operators recognized by Boolean logic ?
- (1) FROM. TO. WHOM
(2) AND. OR. NOT
(3) SEARCH. KEYWORD. TEXT
(4) None of these
25. The complexity of Binary search algorithm is
- (1) $O(n)$ (2) $O(\log n)$
(3) $O(n^2)$ (4) None of these
26. Which of the following data structure is a linear data structure ?
- (1) Trees (2) Graphs
(3) Arrays (4) None of these
27. What is the correct HTML for making a text area ?
- (1) `<input type="textarea">`
(2) `<textarea>`
(3) `<input type+"textbox">`
(4) None of these
28. The first ISO certified markup language was
- (1) XML (2) HTML
(3) SGML (4) None of these
29. SGML stands for
- (1) Standard Generalized Markup Language
(2) Standardised General Markup Language

- (3) Standard Generalized Match Language
- (4) None of these

30. A ____ boot is when DOS is restarted without turning off the computer.
- (1) Warm
 - (2) Reboot
 - (3) System up
 - (4) None of these

SECTION-C : C++ AND VB

31. Which of the following is not a type of constructor ?
- (1) Copy constructor
 - (2) Friend constructor
 - (3) Default constructor
 - (4) None of these
32. Which of the following is not the member of class?
- (1) Static function
 - (2) Friend function
 - (3) Const function
 - (4) None of these
33. How do you refer the current class in VN Net?
- (1) Me
 - (2) This
 - (3) Super
 - (4) None of these

34. Evaluate the following :

```
int fn(int v)
{
if(v==1 || v==0)
return 1;
if(v%2==0)
return fn(v/2)+2;
else
return fn(v-1)+3;
}
for fn(7);
```

- (1) 10
- (2) 11
- (3) 1
- (4) None of these

35. What does the following code do? void afunction(int *x)

```
{
x=new int;
*x=12;
}
int main ()
{
int v=10;
afunction (&v);
cout<<v;
}
```

- (1) Outputs 12
- (2) Outputs 10
- (3) Outputs the address of v
- (4) None of these

36. What is a reference ?

- (1) An operator
- (2) A reference is an alias for an object
- (3) Used to rename an object
- (4) None of these

37. Which method of the XML document class takes xml as string while loading

- (1) Loadxml ()
- (2) Load ()
- (3) Save ()
- (4) None of these

38. Which of the following statement is correct ?

- (1) Overloaded functions can have at most one default argument
- (2) An overloaded function cannot have default argument.
- (3) All arguments of an overloaded function can be default.
- (4) None of these

39. How do you create a Read only Property in VB.NET?

- (1) Using Only Get..EndGet with in property definition
- (2) Using Only Set..EndSet with in property definition
- (3) Using both Get and Set
- (4) None of these

40. Which of the following provides a reuse mechanism?

- (1) Inheritance
- (2) Dynamic binding
- (3) Encapsulation
- (4) None of these

SECTION-C : JAVA

31. Which of the following object gets generated when a user performs an action?

- (1) Source of the event
- (2) The Event
- (3) Event listener
- (4) None of these

32. Which of the following can be described as a method of developing software in a short time by using a set of pre-programmed tools or controls and wizards ?

- (1) NetBeans IDE
- (2) Rapid Application Development
- (3) Graphical Controls
- (4) None of these

33. Which of the following is the name that you give to the programming elements created in a program?

- (1) Identifiers
- (2) Tokens
- (3) Keywords
- (4) None of these

34. What will be the output of the following code:

```
int n=50;
while (true) {
if (n < 10)
continue;
n = n - 10;
}
system.out.println("n is "+n);
```

- (1) 10
- (2) No output
- (3) 50
- (4) None of these

35. How is the following statement written by using the Java shorthand operators?

Y += 5;

- (1) Y = + Y + 5
- (2) Y = Y + 5;
- (3) Y + +5
- (4) None of these

36. What will be the output of the program?

```
class passA
{
    public static void main (string [] args)
    {
        passA p = new passA() ;
        p.start () ;
    }
    void start ()
    {
        long [] a1 = {3, 4, 5};
        long [] a2 = fix(a1) ;
        System.out.print (a1[0] + a1 [1] + a1 [2] + “ “);
        System.out.println (a2[0] + a2 [1] + a2 [2] );
    }
    long [ ] fix(long [] a3)
    {
        a3 [1] = 7;
        return a3;
    }
}
```

- (1) 12 15 (2) 15 15
- (3) 4 5 3 7 5 (4) None of these

37. Which constructs an anonymous inner class instance?

- (1) System.out.println(new Runnable() {public void run () { } });
- (2) Runnable r = new Runnable(public void run() { });
- (3) Runnable r = new Runnable { public void run () { } };
- (4) None of these

38. What will be the output of the program?

```
Public class Test
{
    public static void main (String args [] )
    {
        String str = NULL;
        System.out.println(str);
    }
}
```

- (1) NULL (2) Code runs but no output
- (3) Compile Error (4) None of these

39. Which of the following class is not a member of java.lang package ?

- (1) Calendar (2) String
- (3) Math (4) None of these

40. In which of the following layouts the components are arranged and filled from left to right in rows.

- (1) Flow Layout (2) Absolute Layout
- (3) Border Layout (4) None of these

ETG INTERACTIVE SECTION

41. The following are the fields of the Employees_Details table:

- Emp-Code
- Emo_Name
- Emp_Address
- Emp_ContactNo

You want to add a new field, named Salary, in the Employees_Details table. Which of the following queries allow you to add the Salary column in the table ?

- (1) ALTER TABLE Employees_Details INSERT Salary;
- (2) ALTER TABLE Employees_Details ADD Salary INT (5);
- (3) ALTER TABLE Employees_Details ADD Salary;
- (4) None of these

42. This is truth table for ____ gate

A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

- (1) OR gate (2) AND gate
- (3) NAND gate (4) None of these

43. A file is corrected immediately after the input of a transaction. This is an example of

- (1) Sorting (2) Batching
- (3) On-line updating (4) None of these

44. Flow control takes place at which layer?

- (1) Physical (2) Network
- (3) transport (4) None of these

45. Following code will result in

```
class A { int b = 1; public static void main (String [] args)
{ System.out.println(“b is “ + b); }}
```

- (1) Compilation error – correct answer
- (2) Runtime Error
- (3) Runtime Exception
- (4) None of these

46. The STUDENT_GRADES table has the following columns:

STUDENT_ID	NUMBER (12)
SEMESTER_END	DATE
GPA	NUMBER (4, 3)

Which of the following statements finds the highest Grade Point Average (GPA) per semester?

- (1) SELECT MAX (gpa) FROM student_grades WHERE gpa IS NOT NULL;
 - (2) SELECT MAX (gpa) FROM student_grades GROUP BY semester_end where gpa IS NOT NULL;
 - (3) SELECT MAX (gpa) FROM student_grades WHERE gpa IS NOT NULL GROUP BY semester_end;
 - (4) None of these
47. A host on the internet finds another host by its
- (1) TCP/IP
 - (2) Electronic address
 - (3) FTP
 - (4) None of these

48. When one dimensional character array of unspecified length is assigned an initial value

- (1) An arbitrary character is automatically added to the end of the string.
- (2) '\0' is added at the end of the string.
- (3) Length of the string is added to the end of the string.
- (4) None of these

49. The main function of the dispatcher (the portion of the process scheduler) is

- (1) Swapping a process to the disk
- (2) Assigning ready process to the CPU.
- (3) Suspending some of the processes when the CPU load is high
- (4) None of these

50. The time factor when determining the efficiency of a logarithm is measured by

- (1) Counting the number of key operations
- (2) Counting microseconds
- (3) Counting the number of statements
- (4) None of these



END OF THE EXAM