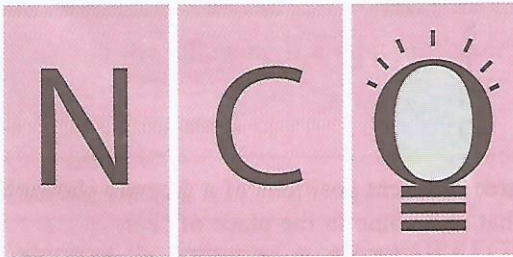
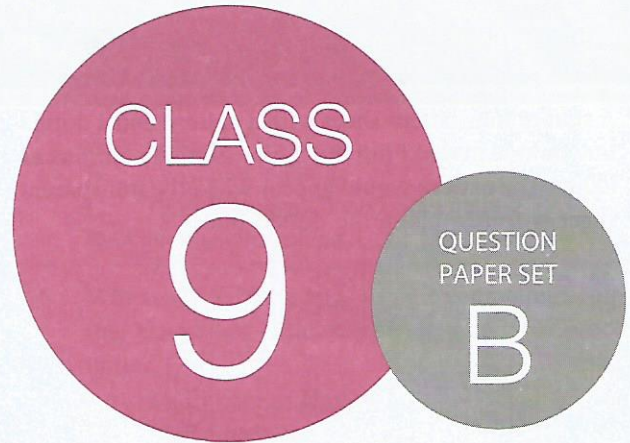


TCS iON  
PRESENTS



SOF NATIONAL CYBER  
OLYMPIAD 2018-19



DO NOT OPEN THIS BOOKLET UNTIL ASKED TO DO SO

Total Questions: 50 | Time: 1 hr.

Name:.....

Section:..... SOF Olympiad Roll No.:..... Contact No.:.....

### Guidelines for the Candidate

1. You will get additional ten minutes to fill up information about yourself on the OMR Sheet, before the start of the exam.
2. Write your **Name, School Code, Class, Section, Roll No.** and **Mobile Number** clearly on the **OMR Sheet** and do not forget to sign it. We will share with you your marks/result/updates on your mobile number.
3. The Question Paper comprises three sections:  
**Logical Reasoning** (10 Questions), **Computers and Information Technology** (35 Questions) and **Achievers Section** (5 Questions). Each question in Achievers Section carries 3 marks, whereas all other questions carry one mark each.
4. All questions are compulsory. There is no negative marking. Use of calculator is not permitted.
5. There is only ONE correct answer. Choose only ONE option for an answer.
6. To mark your choice of answers by darkening the circles on the OMR Sheet, use **HB Pencil** or **Blue / Black ball point pen** only. E.g.

**Q.16: Which of the following is a type of printer?**

- A. Cathode Ray Tube    B. Light Emitting Diode    C. Thermal Flatbed    D. Liquid Crystal Display

As the correct answer is option C, you must darken the circle corresponding to option C on the OMR Sheet.

16. (A) (B) ● (D)

7. Rough work should be done in the blank space provided in this booklet.
8. Return the OMR Sheet to the invigilator at the end of the exam.
9. Please fill in your personal details in the space provided on this page before attempting the paper.







SCIENCE OLYMPIAD FOUNDATION

Inspiring Young Minds Through Knowledge Olympiads

## LOGICAL REASONING

1. A square transparent sheet with a pattern and a dotted line on it is given. Find the figure from the options as to how the pattern would appear when the transparent sheet is folded along the dotted line.

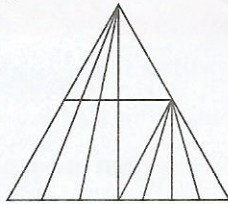


- A. 
- B. 
- C. 
- D. 

2. If in a certain code language, 'ROMAN' is written as '181513114', then how will 'ARABIC' be written in that language?

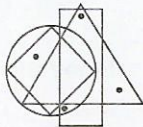
- A. 181293  
B. 1811293  
C. 811293  
D. 1181293



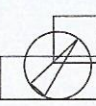

3. How many triangles are there in the given figure?



- A. 25  
B. 12  
C. 20  
D. None of these

4. Select a figure from the options which satisfies the same condition of placement of dots as in the given figure.

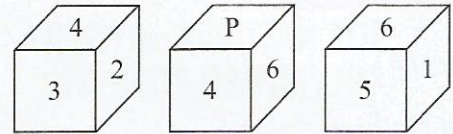


- A. 
- B. 
- C. 
- D. 

5. Each vowel in the word 'JOURNEY' is replaced by the previous letter in the English alphabet and each consonant is replaced by the next letter in the English alphabet. Then, the substitute letters are arranged in alphabetical order. Which of the following letter will be the 5<sup>th</sup> letter from the left end?

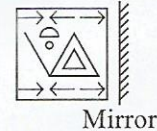
- A. S  
B. T  
C. N  
D. O





6. Three different positions of a dice are shown below. What will come in the place of 'P'?



- A. 3  
B. 5  
C. 2  
D. 1

7. Select the correct mirror image of the given figure.



- A. 
- B. 
- C. 
- D. 

8. Select the odd one out.

- A. 100  
B. 625  
C. 225  
D. 120

9. My friend and I start walking simultaneously towards each other from two places 100 m apart. After walking 30 m, my friend turns left and goes 10 m, then he turns right and goes 20 m and then turns right again and comes back to the road from which he had started walking. If we walk with the same speed, then what is the distance between us at this point of time?

- A. 50 m  
B. 20 m  
C. 30 m  
D. 40 m

10. The son of M is the father of N and maternal grandfather of R. S is the daughter of N and sister of B. On the basis of this information, how is M related to B?

- A. Grandfather  
B. Grandmother  
C. Grandmother's mother  
D. Data inadequate

## COMPUTERS AND INFORMATION TECHNOLOGY

11. Which of the following is a 4 bit processor?

- A. Intel 8086
- B. Intel Pentium II
- C. Intel 4004
- D. Intel 80286

12. Which of the following steps is CORRECT if you want to adjust the tools (that are inserted in the Form) in a way that they become the same size in terms of height and width in Visual Basic 6.0?

- A. Format tab → Make same size
- B. View tab → Make same size
- C. File tab → Make same size
- D. Run tab → Make same size

13. What would be the output of given HTML Code?

```
<ol start="10">
  <li>Laptop</li>
  <li>Desktop</li>
  <li>Tablet</li>
</ol>
<ol type="I" start="10">
  <li>Laptop</li>
  <li>Desktop</li>
  <li>Tablet</li>
</ol>
```

- |   |  |
|---|--|
| <p>A.     10. Laptop<br/>       11. Desktop<br/>       12. Tablet</p> <ul style="list-style-type: none"> <li>• Laptop</li> <li>• Desktop</li> <li>• Tablet</li> </ul>       | <p>B.     10. Laptop<br/>       11. Desktop<br/>       12. Tablet</p> <ul style="list-style-type: none"> <li>1. Laptop</li> <li>2. Desktop</li> <li>3. Tablet</li> </ul> |
| <p>C.     10. Laptop<br/>       11. Desktop<br/>       12. Tablet</p> <ul style="list-style-type: none"> <li>X. Laptop</li> <li>XI. Desktop</li> <li>XII. Tablet</li> </ul> | <p>D.     1. Laptop<br/>       2. Desktop<br/>       3. Tablet</p> <ul style="list-style-type: none"> <li>X. Laptop</li> <li>XI. Desktop</li> <li>XII. Tablet</li> </ul> |

14. Which of the following tags is used to break a single line in HTML?

- A. <br>
- B. <brk>
- C. <break>
- D. All of these

15. Which of the following statements hold(s) true about 'system restore' in Windows 7?

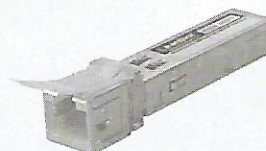
- Statement 1 : It does not delete data files from your system in case of system crash.
- Statement 2 : It can be used when some of the computers that are connected via home network are able to share files, printers and data.

- A. Only Statement 1
- B. Only Statement 2
- C. Both Statement 1 and Statement 2
- D. Neither Statement 1 nor Statement 2

16. Which of the following is a single computing component that has two or more independent cores or processing units?

- A. Multi-core processor
- B. Dual-processor
- C. Single-core processor
- D. None of these

17. Identify the following device that has capability of receiving and sending analog and digital signals.



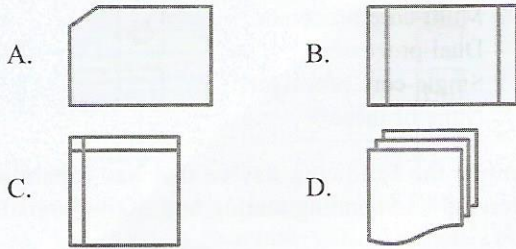
- A. Transceiver
- B. USB Connector
- C. Internal Modem
- D. Combo HUB

18. Which of the following algorithm is CORRECT to find the average of two numbers?

- A. Input : Two number x and y  
Output : The average of x and y  
Step 1 : sum=0,average=0  
Step 2 : input x,y  
Step 3 : sum=x&y  
Step 4 : average=sum%/2  
Step 5 : print average
- B. Input : Two number x and y  
Output : The average of x and y  
Step 1 : input x,y  
Step 2 : sum=0,average=0  
Step 3 : sum=x+y  
Step 4 : average=sum/2  
Step 5 : print average
- C. Input : Two number x and y  
Output : The average of x and y  
Step 1 : input x,y  
Step 2 : sum=x+y  
Step 3 : sum=0,average=0  
Step 4 : average=sum/2  
Step 5 : print average
- D. Input : Two number x and y  
Output : The average of x and y  
Step 1 : input x+y  
Step 2 : sum=0,average=0  
Step 3 : sum=x\*y  
Step 4 : average=x\*y/2  
Step 5 : print average

19. Which edition of Windows 7 operating system is the entry level edition for small notebook with limited hardware configuration?
- Windows 7 Home Basic
  - Windows 7 Starter
  - Windows 7 Home Premium
  - All of these

20. Which of the following flowchart symbols indicates that information is stored in internal memory?



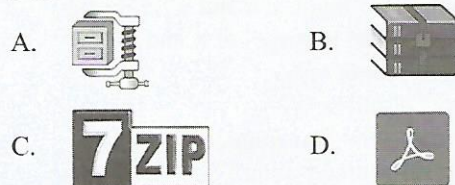
21. Which of the following statements hold(s) true regarding flowchart?

Statement 1 : Flowchart does not necessarily requires any specific programming language concept.

Statement 2 : After successful development of a program, it needs continuous timely maintenance during the course of its operation. The flowchart makes program or system maintenance easier.

- Only Statement 1
  - Only Statement 2
  - Both Statement 1 and Statement 2
  - Neither Statement 1 nor Statement 2
22. Which of the following networks allows to access the computing facility of the host computer but does not allow transfer of files?
- Terminal Network (Telnet)
  - File Transfer Protocol (FTP)
  - Internet Relay Chat (IRC)
  - All of these

23. Select the odd one out.



24. Which of the following statements is/are CORRECT about the given icon?



- It is a web browser developed by Chinese mobile Internet company.

- It is an integrated development environment used in computer programming.
- It is a type of malicious software that replicates itself by inserting its own script.
- Both A and B.

25. Which of the following statements hold(s) true about the given icon with respect to MS-PowerPoint 2010?



Statement 1 : It is the icon of Rehearse Timings in which the amount of time you spent on each slide is recorded.

Statement 2 : You can also save the timings you spent to run the show automatically in future.

- Only Statement 1
- Only Statement 2
- Both Statement 1 and Statement 2
- Neither Statement 1 nor Statement 2

26. Which of the following conditions should be there in MS-Word 2010 document before inserting Table of Contents?

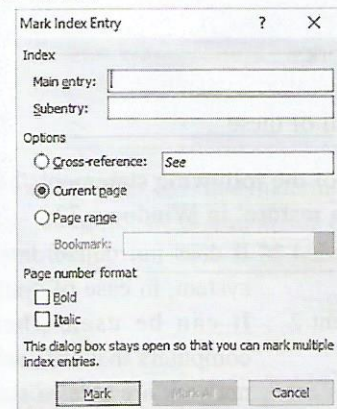
- Headings should be applied in the document with the help of styles gallery.
- Hyperlinks should be present in the document.
- Glossary and Index should be present in the document.
- All of these

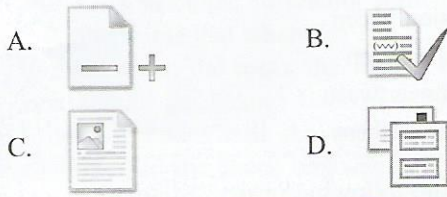
27. Which of the following statements is CORRECT about the given icon of MS-PowerPoint 2010?



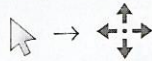
- It is used to write free hand in a slide.
- It can show or hide the comments.
- It is used to reorder through reference materials.
- Both A and B

28. Which of the following icons will provide a set of options that can be used to open the given dialog box in MS-Word 2010?





29. Which of the following features of MS-PowerPoint 2010 will turn the single arrow cursor to the four-headed arrows (as shown here)?



- A. Arrange All  
B. Move Split  
C. Cascade  
D. Grayscale
30. Which of the following statements hold(s) true about the icon given below with respect to MS-Word 2010?



Statement 1 : It allows word to break lines between the syllables of words.

Statement 2 : It selects the margin size for the entire document or the current section.

- A. Only Statement 1  
B. Only Statement 2  
C. Both Statement 1 and Statement 2  
D. Neither Statement 1 nor Statement 2
31. Select the INCORRECT match with respect to MS-Excel 2010.
- A. #N/A – This error occurs when a value is not available to a function or a formula.  
B. #VALUE! – You entered a mathematical formula that references a text entry instead of a numerical entry.  
C. #NULL! – The #NULL! error value occurs when you use an invalid argument in a worksheet function.  
D. #REF! – The #REF! error value occurs when a cell reference is not valid. This happens when you probably deleted a cell range that is referenced in a formula.

32. Which of the following buttons displays arrows that show what cells affect the currently selected cell in MS-Excel 2010?



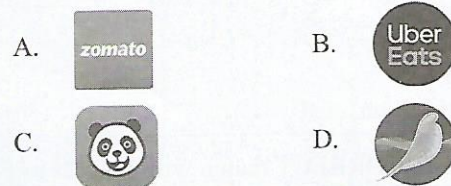
33. Which of the following features of MS-Excel 2010 can be used to combine the values of Sheet 1 (cells A1 to A3) and Sheet 2 (cells A1 to A3) as a product into sheet 3 (as shown here)?

	A		A		A
1	5	1	4	1	20
2	6	2	8	2	48
3	7	3	9	3	63

Sheet 1                  Sheet 2                  Sheet 3

- A. Data validation  
B. Consolidate  
C. Remove Duplicates  
D. Subtotal

34. Select the odd one out.



35. Which of the following statements hold(s) true regarding circuit filter firewall?

Statement 1 : It prevents transfer of suspected packets by checking them at the network layer.

Statement 2 : It checks for all the connections made to the local network, in contrast, to the packet filter firewall which makes a filtering decision based on individual packets.

- A. Only Statement 1  
B. Only Statement 2  
C. Both Statement 1 and Statement 2  
D. Neither Statement 1 nor Statement 2

36. Which of the following statements is CORRECT about ERP systems?

- A. It is a business management software.  
B. It integrates several application of a company to collect data from different activities like manufacturing, marketing, sales, etc.  
C. It falls under the category of processor software.  
D. Both A and B


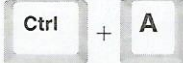


37. While writing an algorithm, instructions are written from \_\_\_\_\_.

- A. Top to Bottom  
B. Left to Right  
C. Right to Left  
D. It depends on the author of the algorithm

38. Motion graphics \_\_\_\_\_.

- A. Refers to any moving / animated graphics created by use of digital sequencing of frames  
B. Is a term interchangeably used with animation  
C. Tends to encompass all animated movies  
D. All of these





39. To import elements on the stage, use the \_\_\_\_\_ key combination in flash CS6.

- A.  B.   
 C.  D. 

40. Identify the following:

- It connects several computers on a network.
  - It receives and transmits the data in a network.
  - It is capable of checking data packets as they are received.
  - It also conserves network bandwidth while delivering the message.
- A. Modem  
 B. NIC  
 C. Hub  
 D. Workstation

41. Select the INCORRECT match with respect to Flash CS6.

- A. New symbol -   
 B. Compiler errors -   
 C. Movie explorer -   
 D. Duplicate window - 

42. A \_\_\_\_\_ is an animation that is created by specifying different values for an object property in different frames in Flash CS6.

- A. Motion tween  
 B. Shape tween  
 C. Remove tween  
 D. None of these

43. Identify the following virus:

- It is a fast-spreading macro virus that is distributed as an e-mail attachment.
  - It targets Microsoft Word and Outlook-based systems.
- A. Parity Boot  
 B. Mydoom  
 C. Melissa  
 D. Kakworm

44. Which of the following is the name of the computer device that creates a single aggregate network from multiple communication network?

- A. Virtual card  
 B. Bridge  
 C. Relay card  
 D. All of these

45. Match the following and select the correct option.

- | Column-I                 | Column-II            |
|--------------------------|----------------------|
| (a) Operating System     | (i) Intel i7         |
| (b) Application Software | (ii) Linux           |
| (c) Processor            | (iii) Modem          |
| (d) Network              | (iv) Adobe Flash CS6 |
- A. (a) → (ii), (b) → (iv), (c) → (i), (d) → (iii)  
 B. (a) → (ii), (b) → (iii), (c) → (i), (d) → (iv)  
 C. (a) → (i), (b) → (ii), (c) → (iii), (d) → (iv)  
 D. (a) → (iii), (b) → (iv), (c) → (ii), (d) → (i)

## ACHIEVERS SECTION

46. Match the following different types of cloud computing services with their description.

- | Column-I          | Column-II  |
|-------------------|--|
| (a) Public Cloud  | (i) A cloud that includes both public and private cloud components   |
| (b) Private Cloud | (ii) Cloud run by a company for that company's own use               |
| (c) Hybrid Cloud  | (iii) Available to anyone who wants to use or purchase the services. |

- A. (a) - (iii), (b) - (ii), (c) → (i)  
 B. (a) - (iii), (b) - (i), (c) → (ii)

- C. (a) - (ii), (b) - (iii), (c) → (i)  
 D. (a) - (i), (b) - (ii), (c) → (iii)

47. Which of the following statements hold(s) true about the given icon of MS-Excel 2010?



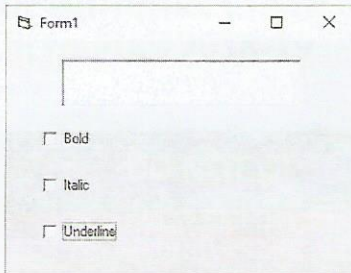
Statement 1 : It freezes the first column and keep it visible while scrolling through the rest of the worksheet.

Statement 2 : You can't move frozen sections without unfreezing and freezing again.

- A. Only Statement 1  
 B. Only Statement 2  
 C. Both Statement 1 and Statement 2  
 D. Neither Statement 1 nor Statement 2

48. Neha has designed following form in Visual Basic 6.0. She wants that whenever she clicks on the check box shown in the form, the font of the text in Text Box should get changed accordingly. Which of the following codes will she write to change the font according to the check box selected?

Assume that : Name of TextBox is Text1,  
Name of CheckBox labelled as Bold is Check1,  
Name of CheckBox labelled as Italic is Check2,  
Name of CheckBox labelled as Underline is Check3.



- A. 

```
Private Sub Check1_Click()
Text1.FontBold = Check1.Value
End Sub
Private Sub Check2_Click()
Text1.FontItalic = Check2.Value
End Sub
Private Sub Check3_Click()
Text1.FontUnderline = Check3.Value
End Sub
```
- B. 

```
Private Sub Check1_Click()
Text1.FontBold = Check1.Value
End Sub
Private Sub Check2_Click()
Text1.FontItalic = Check1.Value
End Sub
Private Sub Check3_Click()
Text1.FontUnderline = Check1.Value
End Sub
```
- C. 

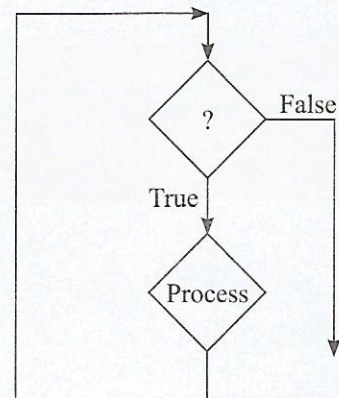
```
Private Sub Check1_Click()
Text1.Font*Bold = Check1.Value
End Sub
Private Sub Check 2_Click()
Text1.Font*Italic = Check2.Value
End Sub
Private Sub Check 3_Click()
```

```
Text1.Font*Underline = Check3.Value
End Sub
```

- D. 

```
Private Sub Check1_Click()
Text.FontBold = Check1.Value
End Sub
Private Sub Check1_Click()
Text.FontItalic = Check2.Value
End Sub
Private Sub Check1_Click()
Text.FontUnderline = Check3.Value
End Sub
```

49. Identify the following structure of flowchart.



- A. Repetition  
B. Selection  
C. Sequence  
D. None of these

50. Which of the following is not an icon of mobile operating system?



- D. Both A and B

SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK



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National Office: Plot 99, First Floor, Sector 44 Institutional area, Gurgaon -122 003 (HR) India

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