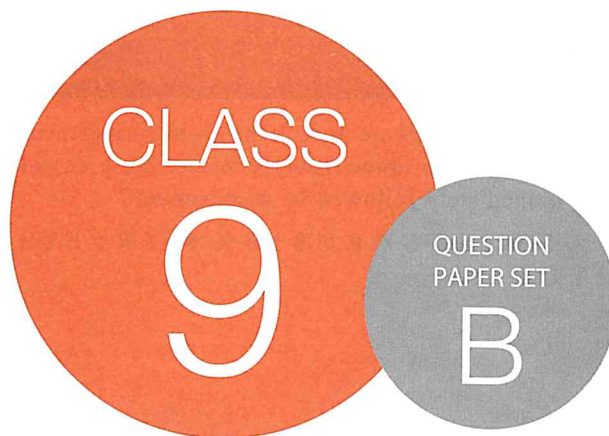


**SOF NATIONAL CYBER
OLYMPIAD 2019-20**



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 your marks / result and other information related to SOF exams 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.

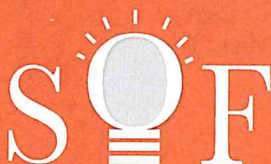
Q.16: Which of the following is a type of printer?

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) (C) (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. How many symbols are there in the given arrangement each of which is immediately preceded by a vowel and immediately followed by a consonant?

7 @ C M 2 N T S © R U 8 1 E % ★ O W # £ S \$ Z Y U 6

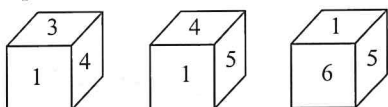
- A. None
B. One
C. Two
D. Three

2. Select the correct water image of the given combination of letters and numbers.

S U C 7 1 Z C M 3 O N I

- A. 2 N C I 7 S C W 3 O N I
B. 2 N C Δ I S C W 3 O N I
C. 2 N C Δ I S C W 3 O N I
D. 2 C N Δ I S C M 3 O I N

3. Three positions of a dice are given below. When 4 is at the top, then which number will be at the bottom?

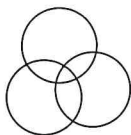


- A. 2
B. 3
C. 1
D. 6

4. If '-' stands for '÷', '+' stands for '×', '÷' stands for '-' and '×' stands for '+', then find the value of $30 - 6 + 5 \times 4 \div 2$.

- A. 27
B. 28
C. 30
D. 40

5. Which of the following options satisfies the given Venn diagram?



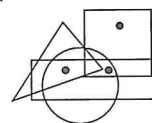
- A. Petals, Bouquet, Flowers
B. Males, Females, Singers
C. Gold, Ornaments, Silver
D. Boys, Students, Athletes

6. If 'M @ N' means 'M is wife of N', 'M + N' means 'M is daughter of N', 'M # N' means 'M is father of N' and 'M - N' means 'M is brother of N', then which of the following expressions indicates that 'T is father-in-law of S'?

- A. S @ Q - R # T + L

- B. S @ R - Q # L + T
C. S @ Q - L + T # R
D. S @ Q - L + R # T

7. Select a figure from the options which does not satisfy the same conditions of placement of the dots as in the given figure.



- A.
B.
C.
D.

8. A square transparent sheet with a pattern and a dotted line on it is given. Select a 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.

9. The following digits are coded as follows:

Digits	6	0	4	1	8	2	5	9	3	7
Codes	M	N	I	#	@	C	T	U	V	*

While coding the given number, following conditions are also to be observed.

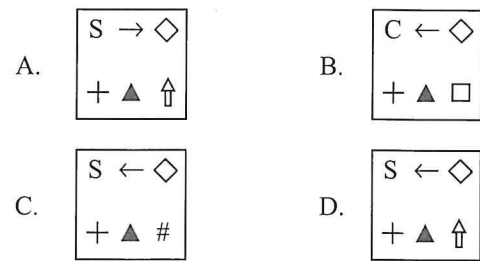
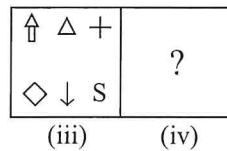
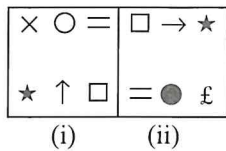
Conditions :

- If the first as well as the last digit is odd, then their codes are to be interchanged.
- If the first digit is even and the last digit is odd, then both are to be coded as the code for odd digit.
- If the last digit is '0', then it is to be coded as 'X'.
- If the first as well as the last digit is even, then both are to be coded as '-'.

Find the code for 432175.

- A. T V # C * I
B. I V C # * T
C. I V C # * I
D. T V C # * T

10. There is a certain relationship between figures (i) and (ii). Establish the similar relationship between figures (iii) and (iv) by selecting a suitable figure from the options which will replace the '?' in the figure (iv).

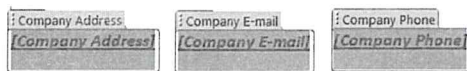


COMPUTERS AND INFORMATION TECHNOLOGY

11. Which of the following HTML codes will float an image towards right if the image is saved on desktop having filename as "bird.jpg"?

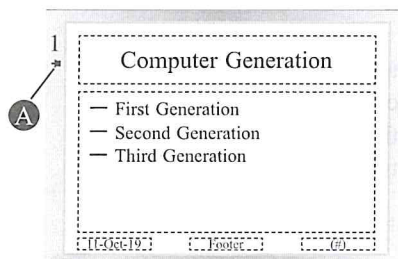
- A. `<marquee behaviour="scroll" dir="right">`
``
`</marquee>`
- B. `<marquee behaviour="scroll" direction="right">`
``
`</marquee>`
- C. `<marquee behaviour="scroll" float="right">`
``
`</marquee>`
- D. `<marquee behaviour="scroll" alt="right">`
``
`</marquee>`

12. Which of the following features would you use to insert the given properties: Company Address, Company E-mail and Company Phone in your document of MS-Word 2010?



- A.  B. 
- C.  D. 

13. What does the icon marked as "A" indicate in the given snapshot of Slide Master view in MS-PowerPoint 2010?



- A. It changes the effects for the current presentation.
- B. It indicates that the slide cannot be used in future.
- C. It ensures that the slide is locked and editing has been turned off.
- D. It ensures that the Slide Master would not be deleted even if it is not in use.

14. Which of the following statements hold(s) true regarding chip-and-pin technology?

Statement 1 : It is a plastic card that has visual embedded microchip in it.

Statement 2 : It is more secure than magnetic strip cards.

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

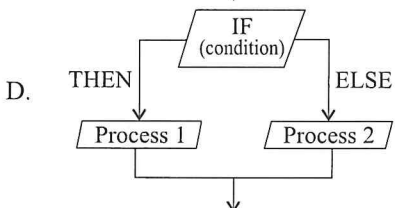
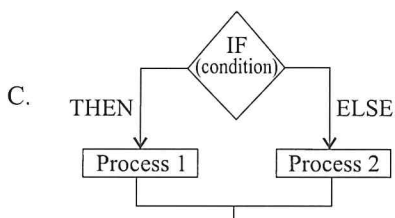
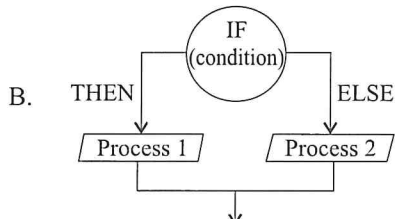
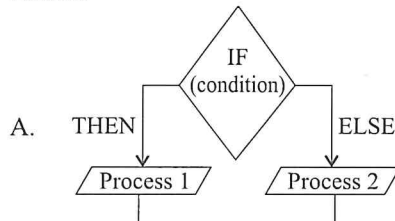
15. Which of the following flowcharts is CORRECT for the given programming instruction?

IF Condition

THEN Process 1

ELSE Process 2

ENDIF



16. If cell A1 contains a date : 05-10-2019 and cell B1 contains a date : 31-10-2019, then what would be the output if user enters a formula, = A1 – B1 in MS-Excel 2010? (Assume that your system default date format is : dd-mm-yyyy.)

- A. -26
- B. 26
- C. 36
- D. -36

17. What would be the result of the given formula in MS-Excel 2010?

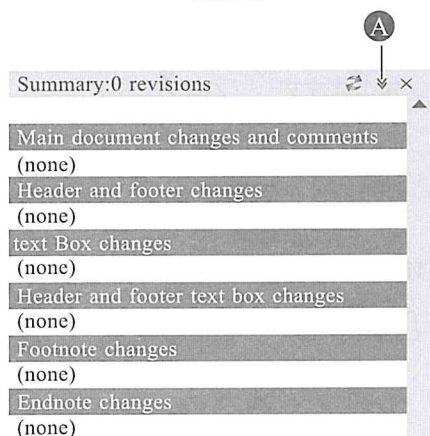
=POWER(PRODUCT(15,6,2),3)

- A. 5832
- B. 5832000
- C. 58320
- D. 58.320

18. Which of the following are examples of non-linear multimedia?

- (i) Playing video games
- (ii) Watching live cricket
- (iii) Watching movie in a theatre
- (iv) Reading a book
- A. Both (i) and (ii)
- B. Both (i) and (iii)
- C. (i), (iii) and (iv)
- D. (i), (ii) and (iii)

19. The icon marked as 'A' in the given image of Reviewing Pane can be used to _____ in MS-Word 2010.



- A. Show/hide detailed summary of each type of changes made to the document
- B. Show/hide the Reviewing Pane
- C. Refresh all the changes made to the document
- D. Move the Reviewing Pane

20. Which of the following technologies allows users to use and access their personal files at any computer with internet access?

- A. 
- B. 



C.

D. **dögpile®**

21. If the MaxLength property of a TextBox control is set to 0 (zero), then how many characters can be entered in Visual Basic 6.0?

- A. 0
- B. 1
- C. Any number of characters
- D. Upto 10 characters

22. _____ is a cybercrime that takes the help of internet in order to sell illegal substance through encrypted e-mail and other internet technology.

- A. Money spam
- B. Drug trafficking
- C. Illegal software piracy
- D. Data spam

23. Which of the following is a version of Google's Android operating system for smart watches?

- A. Android I
- B. Android Fedora
- C. Android Wear
- D. Android Mint





24. Select the INCORRECT match.


Application Software Packages	Commonly Supported Features
A. Graphics package	– Draw designs, present graphs, drag and drop objects, screen capture, import objects
B. Personal assistance – package	– Checking boot programs, fixing error for operating system
C. Word-Processing – package	– Entering and editing text, formatting text, importing text, searching and replacing text string
D. Spreadsheet package	– Rows and columns, relative and absolute cell addresses

25. You can use the _____ tags to add rows to your tables.

- A. <td> and </td>
- B. <cr> and </cr>
- C. <th> and </th>
- D. <tr> and </tr>

26. Select the odd one out.

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

27. The  tool in Flash CS6 lets you transfer color from a _____.
- Bitmap or a fill to another fill
 - Stroke to another stroke
 - Bitmap to stage
 - Both A and B




28. Which of the following statements is INCORRECT about the mesh topology?

- In mesh topology devices are connected with many redundant interconnections between all the network nodes.
 - Partial mesh topology is very expensive to implement as compared to full mesh topology.
 - Full mesh topology does not get affected when one of the nodes goes down.
- Only (i)
 - Only (ii)
 - Only (iii)
 - All of these


29. Match the MS-Word 2010 icons given in Column-I with their names given in Column-II.

Column-I

Column-II

- | | |
|---|----------------------|
| (a)  | (i) Bibliography |
| (b)  | (ii) Manage Sources |
| (c)  | (iii) Add New Source |
- (a)-(ii), (b)-(iii), (c)-(i)
 - (a)-(i), (b)-(ii), (c)-(iii)
 - (a)-(iii), (b)-(i), (c)-(ii)
 - (a)-(iii), (b)-(ii), (c)-(i)

30. The highlighted area marked by X in the given image of MS-Excel 2010 indicates that _____.



	A	B	C
1	22	85	1
2	54	655	2
3	87	55	3
4	656	52	4
5	2121	689.14	5
6	7845	55656	6
7	1323	555	7
8	-5645	5454.21	8
9	5455	321.14	9

- Rows 2, 3, 4, 5 and 6 are grouped together and are expanded.
- Rows 2, 3, 4, 5 and 6 are grouped together and are collapsed.
- Rows 2, 3, 4, 5 and 6 are converted to a table and are expanded.
- Rows 2, 3, 4, 5 and 6 are converted to a table and are collapsed.

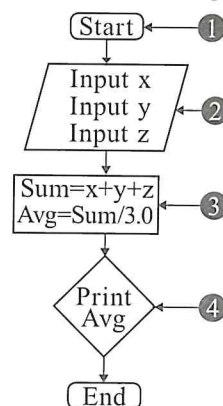
31. Which of the following commands when typed in Command Prompt utility window, will display information about your Windows version, BIOS, processor, memory, network configuration, etc. in Windows 7?

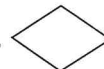
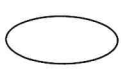

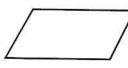
- windowversion.exe
- systemversion.info
- infoversion.exe
- systeminfo.exe

32. Which of the following statements is INCORRECT about GUI based operating system?

- You can use interactive components to interact with computer.
- You can use drop-down menus to do the tasks.
- You cannot use keyboard and mouse to work with computer.
- Microsoft Windows are the examples of such operating system.

33. Tanu has drawn a flowchart to find the average of three numbers as shown below (Shapes of the flowchart are marked as ①, ②, ③ and ④). Her teacher told her that she has used one incorrect shape. Identify the INCORRECT shape and suggest the correct one.



- | | |
|---|---|
| A. ①,  | B. ②,  |
| C. ③,  | D. ④,  |

34. Neeraj wants to perform following tasks in a presentation.

- Translation of some selected text into a different language.
- Find out synonyms of some selected words.
- Compare another presentation with his current presentation.

Which of the following tabs contains all these functionalities in MS-PowerPoint 2010?

- Links
- View
- Review
- Set up

35. Identify the device.

- It forwards data packets between two computer networks.
 - It reads the address information in the packet to determine its ultimate destination and performs the "traffic directing" function by selecting the best path in a network.
 - It is used to share a single internet connection amongst multiple devices on a network.
- A. Wi-Fi
B. Modem
C. Router
D. Optical Hub

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



Statement 1 : It is used to zoom-in/zoom-out the presentation so that the slide fills the window.

Statement 2 : It is used to start a full-screen slide show automatically.

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

37. Which of the following features of MS-Excel 2010 would convert the content (separated by commas) into separate columns as shown here?

Emp-Id, Name, Designation	Emp-Id	Name	Designation

- A. Text to Columns
B. Columns to Text
C. CommaText to Column
D. Separate Text to Column

38. What would be the value of variable res after execution?
 $\text{res} = 9 \text{ Mod } 2 + 1 - 2$

- A. -1
B. 3
C. 0
D. 4

39. Match the following terms given in column-I with their descriptions given in column-II.

- | Column - I | Column - II |
|--------------|---------------------------------|
| (a) Username | (i) Worldwide system of servers |
| (b) Hostname | (ii) username@hostname |
| (c) E-mail | (iii) Unwanted e-mails |
| (d) DNS | (iv) Name given to the user |
| (e) Spam | (v) Name of the server |

- A. (a) - (iv), (b) - (v), (c) - (ii), (d) - (i), (e) - (iii)
B. (a) - (iv), (b) - (v), (c) - (iii), (d) - (i), (e) - (ii)
C. (a) - (v), (b) - (iv), (c) - (iii), (d) - (ii), (e) - (i)
D. (a) - (iv), (b) - (v), (c) - (iii), (d) - (ii), (e) - (i)

40. To maintain a constant orientation of an object with respect to its path, use the _____ check box in the Properties window of Motion Tween in Flash CS6.

- A. Transform
B. Snap
C. Orient to path
D. Rotate

41. Identify the following standard organization.

- It is a multinational body whose membership is drawn mainly from the standards creation committees of various governments throughout the world.
 - It promotes development of standardization to facilitate cooperation on scientific and technological aspects.
- A. ISO (International Organization for Standardization)
B. ANSI (American National Standards Institute)
C. RFC (Request For Comment)
D. NAP (National Access Point)

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

AB¹

Statement 1 : It allows you to add a footnote to the document.

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

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

43. What would be the output of the given HTML code?

```
<table border="1" cellspacing="10">
<tr>
<th>Student Name</th>
<th>RollNo</th>
</tr>
<tr>
<td>Rajni</td>
<td>21<sup>st</sup></td>
</tr>
</table>
```

- A.

Student Name	RollNo
Rajni	21 st
- B.

Student Name	RollNo
Rajni	21 st
- C.

Student Name	RollNo
Rajni	21 st
- D.

Student Name	RollNo
Rajni	21 st

44. Which of the following is present in the 'Set Up' group of Slide Show tab in MS-PowerPoint 2010?
- Resolution
 - Presenter view
 - Play Narrations
 - Reviewing

45. Which of the following is a feature of body-borne computers?
- Constant interaction
 - Multi-tasking
 - User-friendly interface
 - All of these

ACHIEVERS SECTION

46. Given below are the steps that shows the way MS-Excel 2010 evaluates the nested formulas:

- Consider a formula :
=IF(AVERAGE(A1:A3)>10,SUM(B1:B3),0)
- The cell range A1:A3 contains the values 1, 2 and 3, and so the result of the AVERAGE(A1:A3) function is 6, so it will evaluate :
=IF(6>10, SUM (B1:B3),0)
- Now, 6 is not greater than 10, so the expression in the first argument of the IF function is false. So it will evaluate: =IF(False, SUM(B1:B3),0)
- IF function returns the value of the third argument. The sum function is not evaluated because it is the second argument to the IF function and second argument is evaluated only when the expression is true. So it will evaluate and return the result: 0

Which of the following features will enable you to see the different parts of a nested formula (as shown above) in the order the formula is calculated in MS-Excel 2010?

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

- Ra
 - Ravi
 - R
 - Rav
- Ravi
 - Ravi
 - Ravi
 - Ravi

48. What would be the output of the given HTML code?

```
<ol type = a start = 1>
<li> computer </li>
<ul type = "circle">
<li> micro </li> <li> super </li> </ul>
<li> operating system </li>
<ul type=disc>
<li>ios</li> <li>windows</li>
</ul> </ol>
```

- | | |
|----|--|
| A. | <ol style="list-style-type: none"> computer <ul style="list-style-type: none"> micro super operating system <ul style="list-style-type: none"> ios windows |
| B. | <ol style="list-style-type: none"> computer <ol style="list-style-type: none"> micro super operating system <ul style="list-style-type: none"> ios windows |
| C. | <ol style="list-style-type: none"> computer <ul style="list-style-type: none"> micro super operating system <ul style="list-style-type: none"> ios windows |
| D. | <ol style="list-style-type: none"> computer <ul style="list-style-type: none"> micro super operating system <ol style="list-style-type: none"> ios windows |

47. What would be the output of the given Visual Basic code, if user enters a name "Ravi" in a TextBox?

(Name property of the TextBox is set as Text1)

```
Private Sub Command1_Click( )
```

```
    i = 1
```

```
    DO While i <= Len(Text1.Text)
```

```
        Print Left (Text1.Text, i)
```

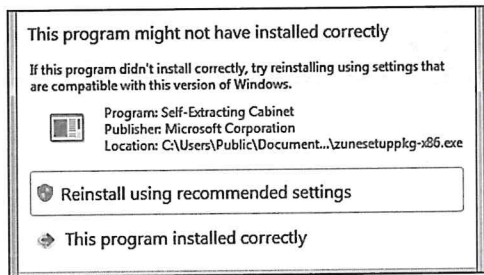
```
        i = i + 1
```

```
    Loop
```

```
End Sub
```

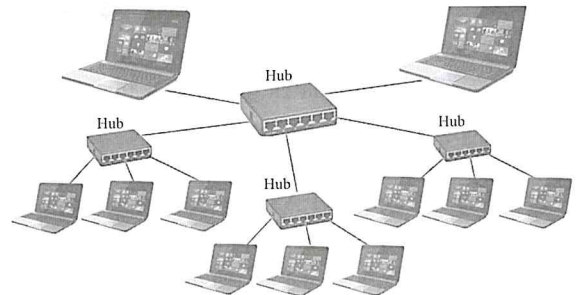
- | | |
|----|---|
| A. | <p>Ravi</p> <p>Rav</p> <p>Ra</p> <p>R</p> |
| B. | <p>R</p> <p>Ra</p> <p>Rav</p> <p>Ravi</p> |

49. The given snapshot appears when an installation program does not reach to a successful conclusion. If an installation routine runs but fails for any reason to complete successfully (in some cases, even if you simply cancel out of the setup process), you will likely to see this message (shown here). What does this feature known as in Windows 7?



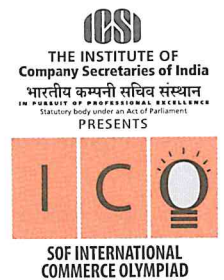
- A. Program Window Options
B. Program Navigation Status
C. Program Credential Assistant
D. Program Compatibility Assistant
50. Identify the topology.
- It is the combination of both star and bus network topology.

- In this topology each segment is provided with dedicated point-to-point wiring to the central hub.
- In this topology if one segment is damaged other segments are not affected.
- Example of this type of topology can be seen in cable TV technology where the main cable from the main office is divided into many branches and so on.



- A. Partial ring topology
B. Connected star topology
C. Tree topology
D. Extended hub topology

SPACE FOR ROUGH WORK



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