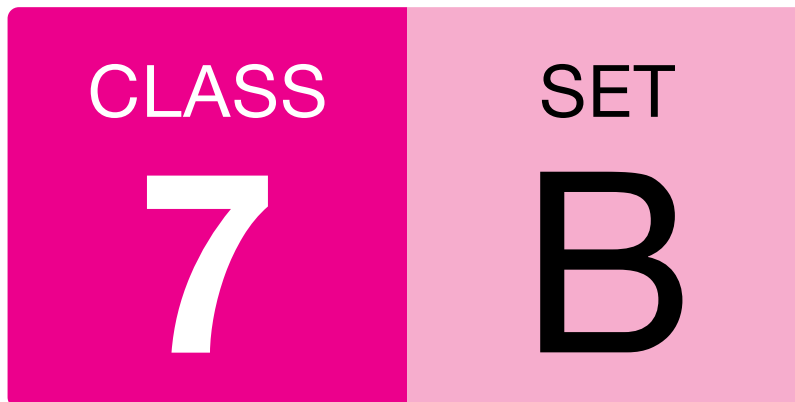




Total Questions : 50

Time : 1 hr.

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 four sections:
Logical Reasoning (10 Questions), **Computer Science** (30 Questions), **AI, Robotics and Information Technology** (5 Questions) and **Achievers Section** (5 Questions).

Each question in Achievers Section carries 3 marks, whereas all other questions carry 1 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 before attempting the paper.



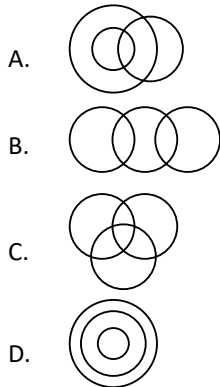
DO NOT OPEN THIS BOOKLET UNTIL ASKED TO DO SO

Name:.....

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

LOGICAL REASONING

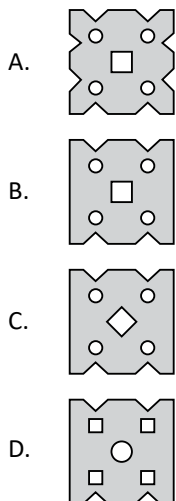
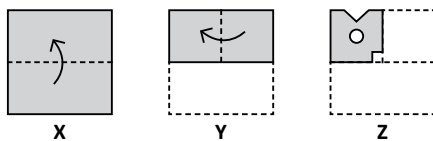
1. Which of the following Venn diagrams best represents the relationship amongst, 'Fathers, Sons and Grandfathers'?



2. What will be the reflex angle between the minute hand and the hour hand of a clock at 10 : 30?

- A. 225°
 B. 310°
 C. 135°
 D. None of these

3. The given question consists of a set of three figures X, Y and Z showing a sequence of folding of a piece of paper. Fig. (Z) shows the manner in which the folded paper has been cut. Select a figure from the options which shows the unfolded form of Fig. (Z).

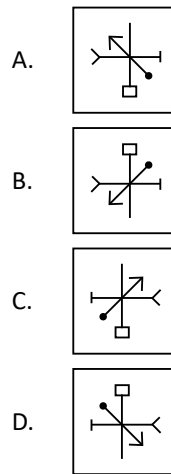
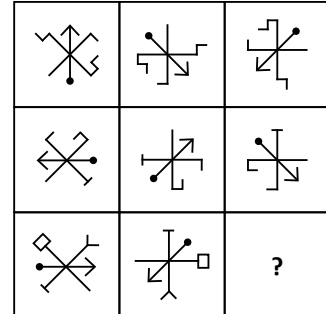


4. How many such pairs of letters are there in the word ECLIPSE each of which have as many letters between them in the word as in the English alphabets?

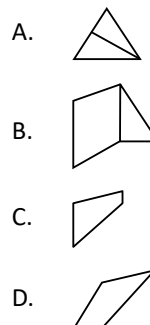
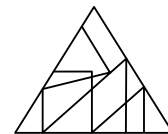
- A. None
 B. One

- C. Two
 D. Three

5. Which of the following options will complete the given figure matrix?



6. Select a figure from the options which is exactly embedded in the given figure as one of its parts.



7. Select the odd one out.

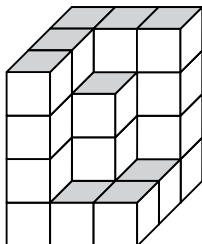
- A. PRN
 B. LNJ
 C. KMJ
 D. TVR

8. Find the missing number which will complete the given number pattern.

21, 10.50, 10.50, 15.75, ?, 78.75, 236.25

- A. 39.35
- B. 35.45
- C. 31.50
- D. 30.50

9. Count the number of cubes in the given figure.



- A. 24
- B. 25
- C. 26
- D. 27

10. Kritika is facing towards West. Turning to her left, she walks 30 metres. She then turn to her right and walks 25 metres. Next, she moves 30 metres to her right. Finally, she turns to the left and moves 20 metres. How far and in which direction is she now from her starting point?

- A. 45 m, East
- B. 45 m, West
- C. 45 m, North
- D. 40 m, West

COMPUTER SCIENCE

11. Which of the following statements is incorrect about action buttons in MS-PowerPoint 2016?

- A. It can only be applied to text, not shapes.
- B. It can link to a custom show or external hyperlink.
- C. It can assign mouse click or mouse-over actions.
- D. It can be used to trigger actions like playing a sound.

12. Which of the following memory types is typically the fastest but smallest in capacity?

- A. Cache
- B. RAM
- C. ROM
- D. SSD

13. Which of the following are characteristics of third-generation computers?

- (i) Use of Integrated Circuits (ICs).
- (ii) Use of punched cards for input and output operations.
- (iii) Examples are IBM 370, PDP-11.
- (iv) Supported high-level languages.

- A. (i) and (ii) only
- B. (ii) and (iii) only
- C. (i), (iii) and (iv) only
- D. (ii), (iii) and (iv) only

14. Which of the following represents the correct hierarchy of memory (from fastest to slowest)?

- A. Cache → RAM → Hard Disk → Optical Disc
- B. RAM → Cache → Optical Disc → Hard Disk

- C. Cache → Hard Disk → Optical Disc → RAM
- D. Hard Disk → Cache → RAM → Optical Disc

15. Bookmark identifies a specific location in a document by assigned name. Which of the following is a valid name for a bookmark in MS-Word 2016?

- A. First name
- B. First_name
- C. 1st name
- D. 1st_name

16. Which of the following formulas will calculate the average of the numbers in cells A1 through A10, excluding empty cells in MS-Excel 2016?

- A. =AVERAGE(A1:A10)
- B. =SUM(A1:A10)/COUNT(A1:A10)
- C. =SUM(A1:A10)/Average(A1:A10)
- D. Both A and B

17. Identify the following with respect to Windows 11.

- It allows the users to organise their open windows by snapping them into a predefined layout.
- It can be accessed by hovering over a window's maximize button.
- It can be accessed by using the keyboard shortcut



- A. Incognito Window
- B. Task Manager
- C. Snap Layouts
- D. System Tray

18. Which of the following I/O devices uses optical recognition technology to convert printed text into machine-readable code?

- A. Barcode reader
- B. Light pen
- C. OCR (Optical Character Recognition)
- D. OMR (Optical Mark Recognition)

19. Which of the following is a cyber attack in which multiple systems flood the bandwidth or resources of a targeted server, website or network, making it slow, unstable or completely unavailable to legitimate users?

- A. Phishing
- B. Ransomware
- C. DDoS
- D. Spyware

20. Which of the following generations of computers introduced the concept of artificial intelligence and parallel processing?

- A. Second
- B. Third
- C. Fourth
- D. Fifth

21. What should be typed in a cell to select all cells in row 5 in MS-Excel 2016?

- A. = A11(5)
- B. = cell(5)
- C. = row(5)
- D. =5:5

22. Which of the following options automatically resizes the column width based on content or stretches across the page while inserting a table in MS-Word 2016?

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

23. Which of the following options is used in HTML to leave notes or explanations in the code that does not appear in the browser?

- A. <note>
- B. <!--....-->
- C. <comment>
- D. <meta>

24. Select the correct statement(s) with respect to program file virus.

- A. It infects executable/program files like .exe and .com files.
- B. It is loaded in memory as soon as a program executes.
- C. Sunday virus is an example of program file virus.
- D. All of these

25. What are the correct ways to open Task Manager in Windows 11?

- (i) Press  +  + .
 - (ii) Right-click on the  → Select Task Manager.
 - (iii) Press  +  +  → Select Task Manager.
- A. (i) and (ii) only
 - B. (ii) and (iii) only
 - C. (i) and (iii) only
 - D. (i), (ii) and (iii)

26. Which of the following options of the Control Panel allows you to perform a System Restore or create a System Image Backup in Windows 11?

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

27. Select the incorrect difference between a compiler and an interpreter.

- | Compiler | Interpreter |
|---|--|
| A. Translates the entire program at once. | Translates code line by line. |
| B. Generates a separate executable file. | No separate file, executes directly. |
| C. Faster execution since code is pre-compiled to machine code. | Slower execution because translation happens during runtime. |
| D. Examples: Python, JavaScript, Ruby. | Examples : C, C++, Java. |

28. Which of the following data storage devices includes flash memory with a USB interface?

- A. Jump drive
- B. Optical disc drive
- C. Hard disk drive
- D. None of these

29. Which of the following is correct about the cache memory in a computer system?

- A. It is used to store data permanently.
- B. It is used to provide temporary storage for frequently accessed data.
- C. It is used to store the operating system.
- D. It is used to manage input and output operations.

30. Which of the following statements is/are incorrect about Scratch?

- (i) A hardware tool for robotics.
- (ii) A block-based visual programming language.
- (iii) A text-based coding language.
- (iv) Image editing software.

- A. (i) only
- B. (i) and (ii) only
- C. (i), (iii) and (iv) only
- D. (ii), (iii) and (iv) only

31. Which of the following window components displays the name of the active worksheet in MS-Excel 2016?

- A. Formula Bar
- B. Navigation Bar
- C. Sheet Tab
- D. Name Box

32. Identify the following with respect to MS-Word 2016.

- It can be triggered by a keyboard shortcut, button or menu option.
- It allows you to automate repetitive formatting, actions or sequences.

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

33. Which of the following statements is incorrect about protection against viruses in computers?

- A. Use a reliable antivirus program and keep it updated.
- B. Avoid downloading files from unknown or untrusted sources.

- C. Always open suspicious e-mail attachments or links.
- D. Enable firewalls and disable auto-run features on external drives.

34. Which of the following symbols can be used to represent an input/output operation in a flowchart?

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

35. Which of the following options connects all the internal components, like the memory, processor, graphics card and also provides power to each component as well as allows them to communicate with each other in computers?

- A. 
- B. 
- C. 
- D. All of these

36. A/An _____ stores information about the themes and slide layouts of a presentation, including the background, color, fonts, placeholder sizes and positioning in MS-PowerPoint 2016.

- A. Section
- B. Action button
- C. Slide Master
- D. Animation Pane

37. Which of the following Control Panel categories changes the appearance of desktop items, applies a theme or screen saver and also customizes the taskbar of the system in Windows 11?

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

38. Identify the following.

- It is one of the services offered by the internet.
- A search query submitted by user is passed to multiple search engines and then their response is merged into a result list.

- A. Binary search
B. Metasearch
C. Megasearch
D. Positive search

39. What would be the output of the given algorithm?

Step 1: Set A = 10

Step 2: Set B = 20

Step 3: If A > B then print A, else print B

- A. 10
B. 20
C. 30
D. A > B

40. Which of the following statements hold(s) true regarding the system software?

Statement 1: It manages CPU, memory, storage and input/output devices.

Statement 2: It provides a platform for application software to run.

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

AI, ROBOTICS AND INFORMATION TECHNOLOGY

41. The field of robotics that deals with making a robot learn from experience is called_____.

- A. Machine Learning
B. Big Data
C. Embedded Systems
D. Electrical Engineering

42. Which type of AI is currently implemented in real-world applications like voice assistants and recommendation systems?

- A. Strong AI
B. Existential AI
C. Weak AI
D. Decision AI

43. Which of the following domains of AI is responsible for enabling machines to see, recognize and process images like humans?

- A. Natural Language Processing
B. Expert Systems
C. Computer Vision
D. Supervised Learning

44. Which of the following intelligences has the ability to use language effectively including reading, writing and speaking?

- A. Naturalistic intelligence
B. Interpersonal intelligence
C. Spatial intelligence
D. Linguistic intelligence

45. Select the odd one out.



ACHIEVERS SECTION

46. Identify the following with respect to Windows 11.

- It removes temporary files.
- It deletes system cache and old Windows updates.
- It empties the Recycle Bin.
- It clears the internet cache and downloads program files.



D. None of these

47. Identify (X) and (Y) with respect to MS-Word 2016.

(X) - It works with hyperlinks to let you jump to a specific place in your document.

(Y) - It refers to specific places in your document such as headings, figures and tables.

- | | (X) | (Y) |
|----|---|---|
| A. |  |  |
| B. |  |  |
| C. |  |  |
| D. |  |  |

48. Select the incorrect match with respect to MS-Excel 2016.

- | | | |
|----|-----------------|--|
| A. | =SUM(A1:A5) | - Adds all values from A1 to A5 and returns the sum of range. |
| B. | =AVERAGE(B1:B3) | - Calculates average of B1 to B3 by calculating mean of two numbers. |
| C. | =MAX(C1:C4) | - Finds the largest value in a set of value. |
| D. | =MIN(C1:C4) | - Finds the smallest value in a set of value. |

49. Which of the following statements is/are correct about radio waves?

- (i) Wi-Fi and mobile data use radio frequencies to send and receive information.
- (ii) These are non-ionizing and safe for everyday use.
- (iii) They have the longest wavelength and lowest frequency in the electromagnetic spectrum.

- A. (i) only
- B. (i) and (ii) only
- C. (ii) and (iii) only
- D. (i), (ii) and (iii)

50. What would be the output of the following HTML code?

```
<p>This is a <strong>bold</strong> and
<em>emphasized</em> sentence.</p>
<h2>My Subheading</h2>
<mark>Highlight this text</mark>
```

- | | |
|----|---|
| A. | <div style="border: 1px solid black; padding: 5px;"> <p>This is a bold and emphasized sentence.</p> <p>Highlight this text My Subheading</p> </div> |
| B. | <div style="border: 1px solid black; padding: 5px;"> <p>This is a <i>bold</i> and emphasized sentence.</p> <p><i>My Subheading</i></p> <p>Highlight this text</p> </div> |
| C. | <div style="border: 1px solid black; padding: 5px;"> <p>This is a bold and <i>emphasized</i> sentence.</p> <p>My Subheading</p> <p>Highlight this text</p> </div> |
| D. | <div style="border: 1px solid black; padding: 5px;"> <p>This is a bold and <i>emphasized</i> sentence.</p> <p>My Subheading</p> <p>Highlight this text</p> </div> |

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