N C O

SOF NATIONAL CYBER OLYMPIAD 2019-20

CLASS 10

QUESTION PAPER SET

B
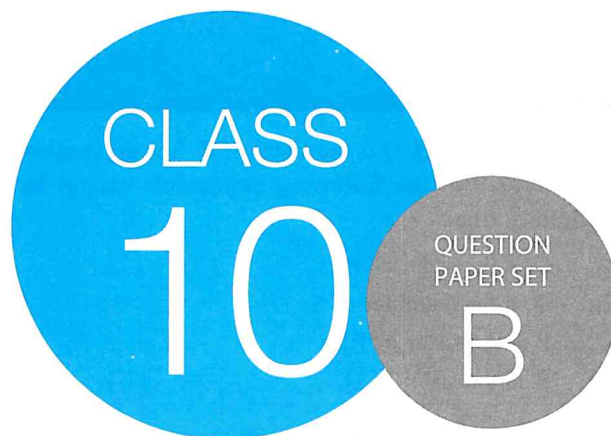
DO NOT OPEN THIS BOOKLET UNTIL ASKED TO DO SO

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. Ⓐ Ⓑ ● Ⓓ

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.

S O F

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1. P is the sister of Q. Q is the sister of R. S is the mother of P. Which of the following statements cannot be definitely true?

   A. Q is the sister of P.
   B. Q is the daughter of S.
   C. P is the sister of R.
   D. R is the sister of Q.

2. Count the number of triangles in the given figure.
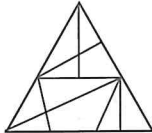
   A. 19
   B. 14
   C. 16
   D. None of these

3. The following letters are coded as follows:

Letters	F	P	M	E	K	D	A	I	H	J	W
Codes	6	5	4	8	1	2	©	7	3	%	9

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

   Conditions:
   (i) If the first letter is a vowel and the last letter is a consonant, then their codes are to be interchanged.
   (ii) If both the first and the last letters are vowels, then both are to be coded as the code for the last letter.
   (iii) If both the first and the last letters are consonants, then both are to be coded as the code for the first letter.

   Find the code for ADHPKFJ.
   A. ©23516©
   B. ©23516%
   C. %23416%
   D. %23516©

4. The given question consists of a set of three figures P, Q and R showing a sequence of folding of a piece of paper. Fig. (R) shows the manner in which the folded paper has been cut. Select a figure from the options which would most closely resemble the unfolded form of Fig. (R).
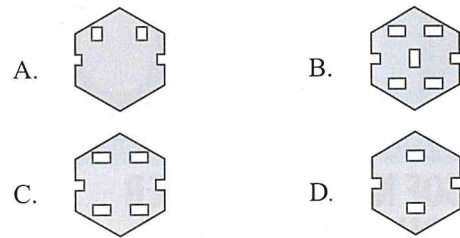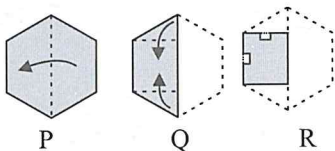

5. If '@' stands for 'addition', '©' stands for 'subtraction', '$' stands for 'multiplication', '£' stands for 'division' and '%' stands for 'equal to', then which of the following options is correct?

   A. 6 @ 12 £ 3 $ 8 © 3 % 30
   B. 4 @ 16 $ 5 £ 8 © 5 % 9
   C. 30 @ 5 © 4 $ 10 £ 5 % 17
   D. 16 @ 64 £ 4 © 4 $ 3 % 10

6. Which of the following options satisfies the same conditions of placement of the dots as in the given figure?
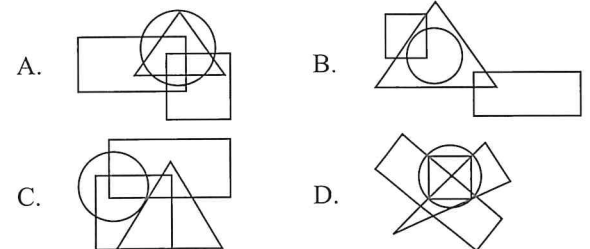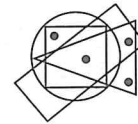
7. Which of the following figures will complete the given figure matrix?
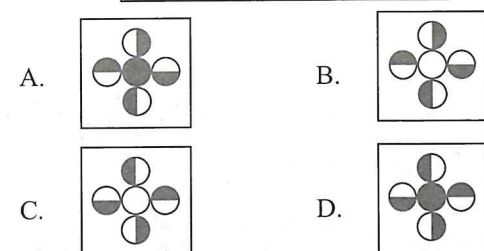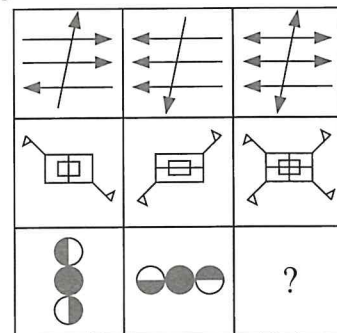
8. P, Q, R, S, T, U, V, W and X are nine friends. R is 2 m East of T. P is 1 m North of T and W is 2 m South of P. V is 1 m West of W while S is 3 m East of V and U is 2 m North of V.

   What is the position of P with respect to V?

   A. $\sqrt{5}$ m, North-West
   B. $\sqrt{5}$ m, North-East
   C. 4 m, North-West
   D. 4 m, North-East

9. How many pairs of letters are there in the word CONGREGATION which have as many letters between them in the word as in the English alphabets?

   A. Five
   B. Two
   C. Three
   D. More than five

10. Read the given information carefully and answer the question that follows.

    I.   P weighs twice as much as Q.
    II. Q weighs four and half times as much as R.
    III. R weighs half as much as S.
    IV. S weighs half as much as T.
    V.   T weighs less than P but more than R.

    T is heavier than which of the following two articles?

    A. Q and S
    B. R and S
    C. P and R
    D. P and Q

COMPUTERS AND INFORMATION TECHNOLOGY

11. Identify the data type in MS-Access 2010, with the help of given data.

    ▤ Field Size |255|
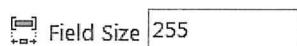
    A. Currency
    B. OLE object
    C. Text
    D. Attachment

12. Which of the following is a security technology that establishes an encrypted link between a browser and a web client?

    A. Usenet
    B. Telnet
    C. SSL
    D. InerNIC

13. Which of the following 'Save & Send' options of File tab will open an e-mail message with an attached copy of the file in its original file format in MS-Word 2010?

    A.   B.

    C.   D.

14. Identify the following with respect to computer network.
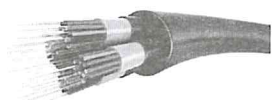
    • It is a type of cable that consists of a bundle of glass threads that transmit messages using light waves.
    • It can carry more information over long distances and is free from electromagnetic interference.
    • It is much thinner and lighter than metal wires.

    A. Electromagnetic cable
    B. Fiber optic cables
    C. Twisted-pair cables
    D. Coaxial cable

15. What would be the output of the given HTML code?
    <p>You require a <mark>password</mark> to login an email.</p>

    A. You require a password to "login" an email.
    B. You require a password to login an email.
    C. You require a password to login an email.
    D. You require a "password" to login an email.

16. _____ is the free and open source web browser and file manager that provides web access and file-viewer functionality for Unix like operating system.

    A. kFTP
    B. Linux Mint
    C. Konqueror
    D. Unix Zilla

17. Observe the two database tables given below (Table 1 and Table 2). In Table 2 SC_ID is _____ key.

    Primary key
    ↓

SC_ID	School name		Student number	Name	SC_ID
SC1	XYZ		SN1	Aman	SC1
SC2	ABC		SN2	Manish	SC2
SC3	PQR		SN3	Suraj	SC3

    Table 1   Table 2
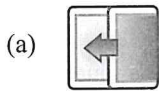
    A. Foreign
    B. Relational
    C. Reference
    D. Interface

18. Match the icons given in Column-I with their suitable names given in Column-II with respect to MS-PowerPoint 2010.

Column - I		Column - II	
(a)		(i)	Themes
(b)	Aa	(ii)	Animation
(c)		(iii)	Insert SmartArt Graphic
(d)		(iv)	Transition to This Slide

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

19. Which of the following computer buses carries command or signal from the CPU and returns status signals from the devices?
A. Data bus
B. Address bus
C. Control bus
D. None of these

20. Which of the following statements hold(s) true regarding the marks (marked by "(P)") shown in the inserted table of MS-Word 2010?

Statement 1 : They are called end-of-cell markers.
Statement 2 : They are printable.
A. Only Statement 1
B. Only Statement 2
C. Both Statement 1 and Statement 2
D. Neither Statement 1 nor Statement 2

21. What would be the result of the given function in MS-Excel 2010?
= IF(200 < 400, 5/0, "SOF")
A. "SOF"
B. 1/0
C. #NULL
D. #DIV/0!

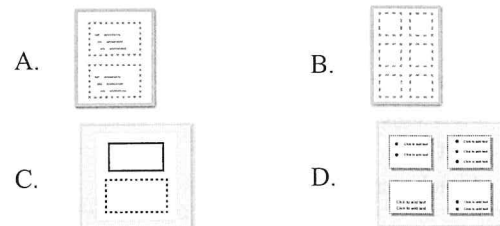22. Which of the following is NOT related to the fourth generation of computer?
A. VLSI technology
B. Time sharing OS
C. Ultrabooks
D. UNIX operating system

23. What would be the output of the given HTML code?
```
<html>
<body>
<dfn>OLYMPIAD</dfn>
</body>
</html>
```
A. *OLYMPIAD*
B. **OLYMPIAD**
C. ~~OLYMPIAD~~
D. OLYMPIAD

24. Which of the following views would you select to add a fill to Notes pane in MS-PowerPoint 2010?

A.   B.

C.   D.

25. Which of the following statements hold(s) true about data scanning devices?

Statement 1 : They eliminate the need for manual entry of data by human beings, thus, improving data accuracy and timeliness of the data processed.
Statement 2 : Bar-code reader and MICR are its examples.
A. Only Statement 1
B. Only Statement 2
C. Both Statement 1 and Statement 2
D. Neither Statement 1 nor Statement 2

26. The given example shows the components of a TCP/IP network. Identify the parts marked with X and Y.

$$\underset{\underset{X}{|}}{132.168}.\underset{\underset{Y}{|}}{1.100}$$

A. X - It specifies the unique number assigned to a particular network.
   Y - It uniquely identifies each host on the network.
B. X - It uniquely identifies each host on the network.
   Y - It specifies the unique number assigned to a particular network.

C. X - It specifies unique number assigned to a web browser.

Y - It uniquely identifies each opened tab in your browser.

D. X - It uniquely identifies each opened tab in your browser.

Y - It specifies unique number assigned to an opened website.

27. What is/are the benefit(s) of a multitasking operating system?

A. It guarantees response to events within fixed period of time.

B. It reads from and reacts to sensor data.

C. Multiple jobs are executed by the CPU simultaneously by switching between them.

D. Both A and B

28. The given icon is present under Layout tab of Table Tools. Its function is to _____ in MS Word 2010.

A. Automatically resize the column widths based on the size of the text in them

B. Distribute the width of the selected columns equally between them

C. Split the selected cells into multiple new cells

D. Repeat the header rows on every page

29. Which of the following is the CORRECT order of steps required to follow, if you want to open Step by Step Mail Merge Wizard as shown in the given image in MS-Word 2010?
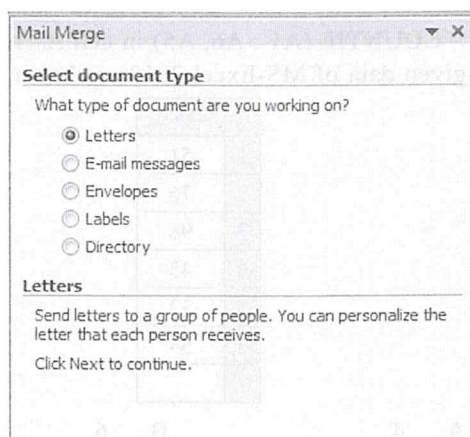
A. Mailings Tab → Start Mail Merge group → Open Step by Step Mail Merge

B. Mailings Tab → Create group → Start Step by Step Mail Merge Wizard

C. Mailings Tab → Start Mail Merge group → Click on drop-down arrow of 'Start Mail Merge' → Step by Step Mail Merge Wizard

D. Mailings Tab → Merge group → Click on drop-down arrow of 'Merging' → Step by Step Mail Merge Wizard

30. What is the function of device management module of an operating system?

A. It provides a set of commands which users use to give instructions to a computer for execution of their jobs.

B. It bridges the gap between functionality of an operating system and needs of users for frequently used programs.

C. It deals with protecting and managing various files and folders.

D. It takes care of controlling all I/O devices of a computer system and provides a simple and easy to use interface to these devices.

31. Which of the following is NOT a physical tag in HTML?

A. . . .

B. <u> . . .</u>

C. ^{. . .}

D. . . .

32. Which of the following is a hierarchical database that stores configuration settings and options in Windows operating system?

A. Dynamic Link Registry

B. Windows Registry

C. Windows Help Manager

D. Windows Initialization File

33. Which of the following Format tools is used to convert the Picture-1 into Picture-2 in MS-PowerPoint 2010?

Picture-1   Picture-2

1. Picture Effects

2. Picture Layout

3. Remove Background

A. Only 1

B. Both 1 and 2

C. Only 3

D. 1, 2 and 3

34. Select the odd one out.

35. What would be the result of the given formula in MS-Excel 2010, if the values of cell A1 and B1 is COMPUTER and science respectively?

=UPPER(REPLACE(B1, 1, 5, A1))

A. SCIENCECOMPUTER
B. ComputerScience
C. SCIENCEco
D. COMPUTERCE

36. Which of the following options is used to create a basic report of the data in the current table in MS-Access 2010?

A.   B.

C.   D.

37. The following HTML code indicates that _____.

```
<table>
 <tr>
  <th>Student</th>
  <th>Marks</th>
 </tr>
 <tr>
  <td>Joya</td>
  <td>500</td>
 </tr>
 <tr>
  <td>Rahul</td>
  <td>700</td>
 </tr>
</table>
```

A. The table has no border
B. The table has a border of default thickness
C. The table has extra space between the cells
D. The table has black background color

38. _____ refers to an electronic environment that is sensitive and responsive to the presence of people.

A. Ambient Intelligence
B. Fog Computing
C. Semantic Web
D. Nano Computing

39. Which of the following statements is INCORRECT about adware?

A. It is a program that automatically delivers advertisements to host computer.
B. It produces advertisement in the form of a pop-up.
C. It spies on what you are doing at your computer by collecting data such as keystrokes.
D. Both A and B

40. If there is any change in the table structures of the database, the user view of data should not get changed. This is a _____ data independence rule in DBMS.

A. Physical
B. Logical
C. Heading
D. Non-linear

41. _____ ensures that each process and application receives enough time from the processor to function properly.

A. Processor software
B. Process software
C. System software
D. Application software

42. The portion marked as (X) in the given picture is used to _____ in MS-PowerPoint 2010.
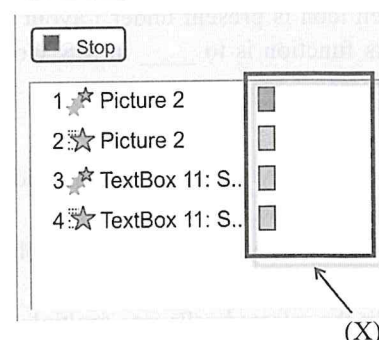
A. Enter ready-made shapes
B. Choose the background theme
C. Show which effect is playing
D. Change the layout of picture

43. What would be the output if you type a formula :

= COUNTIF (A1 : A6, A5) in cell A7 regarding the given data of MS-Excel 2010 as shown here?

⊿	A
1	51
2	76
3	98
4	43
5	32
6	54
7	

A. 4   B. 6
C. 1   D. 0

44. Which of the following is NOT a display adapter?
A. Enhanced Graphics Adapter
B. Video Graphics Array Adapter
C. Super Video Graphics Array Adapter
D. Speed Graphics Enhanced Adapter

45. A GPS watch is a device with integrated GPS receiver that is worn as a single unit strapped onto a wrist. For which of the following purposes, a GPS watch can be used?

A. Fitness training

B. Locating children and adults with intellectual disabilities

C. Multi-platform connectivity

D. All of these

46. The initial component of an electronic mail system is the Mail User Agent. User, with the help of user agent can do the following tasks as shown below in the figure.
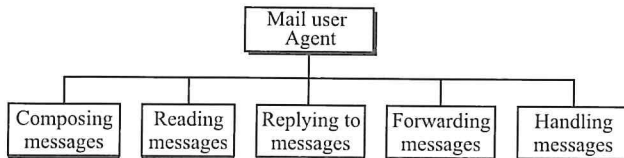
Which of the following is an example of Mail User Agent, who is responsible for the tasks mentioned in the above diagram?

A. Safari

B. Microsoft Outlook

C. AOL Search

D. Both A and B

47. What would be the result of the given HTML code?

```
<table rules="all">
<tr>
    <th>Car</th>
    <th>Model</th>
</tr>
<tr>
<td>Mahindra</td>
<td>TUV300</td>
</tr>
</table>
```

A.
Car	Model
Mahindra	TUV300

B.
Car	Model
Mahindra	TUV300

C.
Car	Model
Mahindra	TUV300

D.
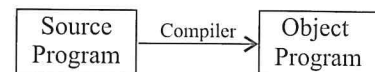| Car	Model
Mahindra	TUV300

48. Which of the following formulas is CORRECT, if you want to display *--*--*--*--*-- in MS-Excel 2010?

A. =REPETITION("*--",5)

B. =REPETITION("*","-",5)

C. =REPT("*--",5)

D. =REPT("star", "dash",5)

49. Compilers are software programs residing permanently on secondary storage. Arrange the following steps in a CORRECT order to execute the object program by the compiler.

(i) To execute the program, the computer loads the object program into main memory from secondary storage and executes it.

(ii) The computer then executes the compiler with the source program as its input data.

(iii) To translate a source program, a computer loads the compiler and the source program from secondary storage into its main memory.

(iv) It generates the equivalent object program as its output, which is normally saved in the file on secondary storage.

A. (iv) → (iii) → (ii) → (i)

B. (iii) → (ii) → (i) → (iv)

C. (i) → (iv) → (ii) → (iii)

D. (iii) → (ii) → (iv) → (i)

50. Identify the following.

● It is a security technology that can be used by the organisation to protect all the online transactions done on their website.

● It basically creates a foundation of trust by establishing a secure connection while the customers make online purchase, and to ensure their connection is secure, browser provides some visual clues, such as green bar, lock icon, etc.

A. TCP

B. POP

C. IMAP

D. SSL

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