

**SOF NATIONAL CYBER OLYMPIAD**

Total Questions : 50

Time : 1 hr.

**PATTERN & MARKING SCHEME**

Section	(1) Logical Reasoning	(2) Computers & IT	(3) Achievers Section
No. of Questions	10	35	5
Marks per Ques.	1	1	3

**SYLLABUS**

**Section - 1 :** Verbal and Non-Verbal Reasoning.

**Section - 2 :** History and Generation of Computers, Types of Computers, MS-Windows, MS-Word(Working with Charts and Tables, Using Page Layout tab, Arranging multiple windows of a document), MS-PowerPoint(Creating presentation using Animation, Custom Animation and Transitions, Creating new slides using Slides pane, Outline pane and Slides from Outline, Working with Handouts and Notes Master, Arranging multiple windows of a presentations, Working with Charts and Tables), Internet & E-mail, Introduction to QBASIC, Hardware, Software, Input & Output Devices, Memory & Storage Devices, Latest Developments in the field of IT.

**Section - 3 :** Higher Order Thinking Questions - Syllabus as per Section - 2.

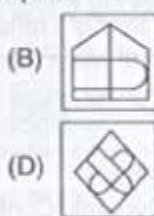
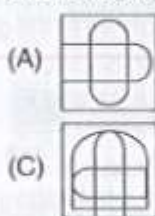
Questions are based on Windows 7 and MS-Office 2010.

**LOGICAL REASONING**

1. Select a figure from the options in which the figure (X) is exactly embedded as one of its part.



Figure (X)



2. The given equations are solved on the basis of a certain system. On the same basis, find out the correct answer from amongst the options.  
If  $12 - 5 = 84$ ,  $10 - 5 = 50$ ,  $8 - 5 = 24$ , then  $6 - 5 = ?$

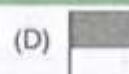
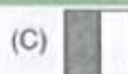
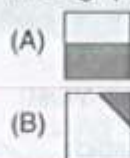
(A) 11  
(C) 6

(B) 30  
(D) 1

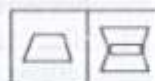
3. Select a figure from the options which will complete the Fig. (X).



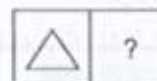
Fig. (X)



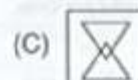
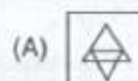
4. The given question consists of figures (i), (ii), (iii) and (iv). There is a definite relationship between figures (i) and (ii). Establish a similar relationship between figures (iii) and (iv) by selecting a figure from the options which will replace the question mark in fig. (iv).



(ii)



(iv)



5. If 'Cloud' is coded as 'Rain', 'Rain' is coded as 'Tree', 'Tree' is coded as 'Axe', 'Axe' is coded as 'House' and 'House' is coded as 'Mason', then from which of the following 'Wood' is obtained?

(A) Tree  
(C) Axe

(B) Rain  
(D) Mason

**COMPUTERS AND INFORMATION TECHNOLOGY**

6. What can be used with a PRINT statement for printing multiple values in a single line in QBASIC?  
(A) Comma  
(C) Tab (n)

(B) Semicolon  
(D) All of these


7. Windows 7 can run on \_\_\_\_\_.

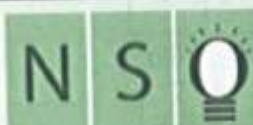
(A) 32-bit processors  
(B) 64-bit processors  
(C) 128 bit processors  
(D) Both (A) and (B)



8. In MS-Word 2010, to insert the header and footer in a document, which tab should you go to?  
 (A) View (B) Page Layout  
 (C) Home (D) Insert
9. The software program that acts as an interface between the user and the www is \_\_\_\_\_.  
 (A) E-mail (B) Internet  
 (C) Protocol (D) Web browser
10. Which of the following is a volatile memory?  
 (A) ROM (B) RAM  
 (C) EPROM (D) PROM
11. By clicking which button one can return the window to its original size?  
 (A) Maximize button (B) Minimize button  
 (C) Restore button (D) Close button
12. To switch between the running applications, \_\_\_\_\_.  
 (A) Press F1 (B) Press ALT + F4  
 (C) Press TAB  
 (D) Press and hold down ALT and press TAB
13. What is the difference between Volatile and Non-Volatile Memory?  
 (A) They are both same types of memory.  
 (B) Volatile memory loses its contents when there is no electricity while non-volatile memory retains its content with or without electricity.  
 (C) Non-volatile memory loses its contents when there is no electricity while volatile memory retains its content with or without electricity.  
 (D) None of these

### ACHIEVERS SECTION

14. What would be the output of given QBASIC code if user enters the value of A = 1 and B = 5?  
 CLS  
 INPUT A  
 INPUT B  
 SUM = A + B  
 Avg = SUM/2  
 PRINT "SUM="; SUM  
 PRINT "Average="; Avg  
 (A) SUM= 6 Average= 3 (B) A = 1 B = 5 SUM = 7 Average = 3  
 (C) A = 1 B = 5 SUM = 6 Average = 3 (D) SUM = 6 Avg = 3
15. Transition effect deals with the entrance and exit of a slide in a slide show. Which of the following categories of Transitions is depicted in the given image of MS-PowerPoint 2010?  
  
 Dissolve Checkerboard Blinds Clock  
 (A) Subtle (B) Exciting  
 (C) Dynamic Content (D) Static Content



SOF NATIONAL  
SCIENCE OLYMPIAD

#### SYLLABUS

Section - 1 : Verbal and Non-Verbal Reasoning.

Section - 2 : Motion and Measurement of Distances, Light, Shadows and Reflections, Electricity and Circuits, Fun with Magnets, Our Environment, Sorting and Separation of Materials, Changes Around Us, Living Organisms and Their Surroundings, Food and its Components, Fibre to Fabric.






Section - 3 : Higher Order Thinking Questions - Syllabus as per Section - 2.

Total Questions : 50

Time : 1 hr.

PATTERN & MARKING SCHEME			
Section	(1) Logical Reasoning	(2) Science	(3) Achievers Section
No. of Questions	10	35	5
Marks per Ques.	1	1	3

### LOGICAL REASONING

1. If A stands for add, B for subtract, C for multiply and D for divide then 4 A 3 B 3 A 2 stands for \_\_\_\_\_.  
 (A) 2 (B) 4  
 (C) 6 (D) 8
2. Pia walks a distance of 4 metres towards south. Then she turns to the left and walks 3 metres. After this she turns to the right and walks 4 metres. In which direction is she facing now?
- (A) North-East (B) South  
 (C) North (D) South-West
3. Select a figure from the options in which figure (X) is exactly embedded as one of its part.  
  
 (A)  (B)   
 (C)  (D) 

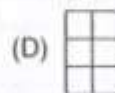
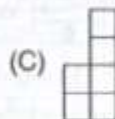
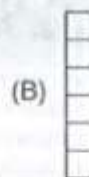
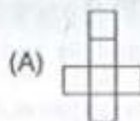


4. Find the number of triangles in the given figure.

(A) 25  
(B) 20  
(C) 21  
(D) 26



5. Which net, when folded, will cover all the faces of a cube?



## SCIENCE

6. Read the given statements and select the correct option.

**Statement 1 :** The process of separation of lint and seeds from harvested cotton fibres is called ginning.

**Statement 2 :** Process of forming slivers from ginned material is called combing.

- (A) Both statements 1 and 2 are true and statement 2 is the correct explanation of statement 1.  
(B) Both statements 1 and 2 are true but statement 2 is not the correct explanation of statement 1.  
(C) Statement 1 is true and statement 2 is false.  
(D) Both statements 1 and 2 are false.

7. We use different parts of different plants as food source. Refer to the labelled figure of a typical plant and select the option that correctly matches an edible plant part with its example.

- (A) P - Broccoli, Q - Cinnamon  
(B) R - Cabbage, S - Chilli  
(C) T - Cabbage, U - Spinach  
(D) Q - Clove, T - Lettuce



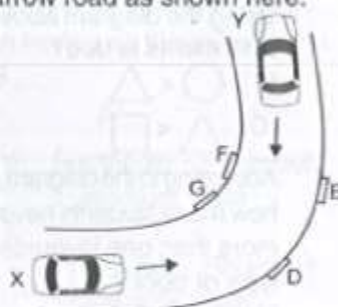
8. What adaptation does the given organism show?

- (A) Strong hind leg muscles  
(B) Hollow bones  
(C) Webbed feet  
(D) Both (B) and (C)



9. Two cars X and Y are travelling in opposite directions on a narrow road as shown here.

Four possible positions for placing a mirror are labelled D, E, F and G. In order to avoid an accident, a mirror could be placed at position \_\_\_\_\_.

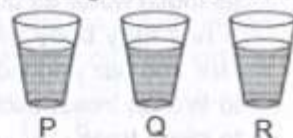


- (A) E  
(C) G

- (B) D  
(D) F

10. Three glasses P, Q and R having equal amount of water were taken and equal amount of salt was added to each one of them. After that, P was cooled, Q was heated and R was left undisturbed. Water in which glass will now taste most salty?

- (A) P  
(B) Q  
(C) R  
(D) All will taste the same



11. Rohit's father experienced a heart attack. Doctor told him that his blood vessels have become narrower. What could be the reason for this?

- (A) His diet has an excess of roughage and water.  
(B) His diet lacks proper amount of vitamins and minerals.  
(C) His diet has an excess of fats and carbohydrates.  
(D) His diet lacks proper amount of proteins and carbohydrates.

12. Neutral insulator P is rubbed with neutral insulator Q. Insulator P becomes positively charged after the rub. Which of the following statements is correct?

- (A) P loses some electrons to insulator Q.  
(B) Q loses some electrons to insulator P.  
(C) P gains positive charge from insulator Q.  
(D) Q gains positive charge from insulator P.

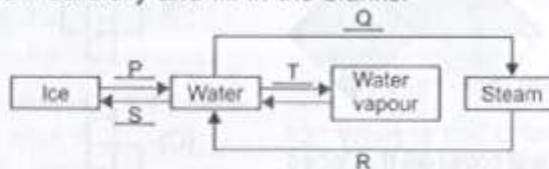
13. We can recycle water by \_\_\_\_\_.

- (A) Reusing the water from washing clothes to cook  
(B) Discharging factory waste into canals and seas  
(C) Discharging sewage and waste materials into the ocean  
(D) Reusing the water from washing clothes to flush in toilets



## ACHIEVERS SECTION

14. Observe the given diagram carefully and fill in the blanks.



	P	Q	R	S	T
(A)	Freezing	Boiling	Condensation	Melting	Evaporation
(B)	Freezing	Evaporation	Boiling	Melting	Condensation
(C)	Melting	Boiling	Condensation	Freezing	Evaporation
(D)	Melting	Evaporation	Condensation	Freezing	Boiling

15. Read the given passage.

Animals X, Y and Z are found in completely different habitats. Animal X is nocturnal and has developed many characters to conserve as much water as possible in the body. Animal Y has furry body with thick skin. It is large in size and has padded feet. Animal Z is adapted to live on trees, sticky pads on its feet help it to climb trees.

Which of the following can you conclude regarding the habitats of these animals?

- (A) Animal X lives in a place with annual rainfall of about 80-100 cm.
- (B) Animal Y lives in a place where days may be extremely hot and nights can be very cold.
- (C) Animal Z lives in an area with annual rainfall of about 20-25 cm.
- (D) Animal Y lives in an area where temperature sometimes reach  $0^{\circ}\text{C}$  or fall below it.



**SOF INTERNATIONAL  
MATHEMATICS OLYMPIAD**

### SYLLABUS

Section - 1 : Verbal and Non-Verbal Reasoning.

Section - 2 : Knowing our Numbers, Whole Numbers, Playing with Numbers, Basic Geometrical Ideas, Understanding Elementary Shapes, Integers, Fractions, Decimals, Data Handling, Mensuration, Algebra, Ratio And Proportion, Symmetry, Practical Geometry

Section - 3 : The Syllabus of this section will be based on the syllabus of Mathematical Reasoning.

Section - 4 : Higher Order Thinking Questions - Syllabus as per Section - 2.

Total Questions : 50

Time : 1 hr.

### PATTERN & MARKING SCHEME

Section	(1) Logical Reasoning	(2) Mathematical Reasoning	(3) Everyday Mathematics	(4) Achievers Section
No. of Questions	15	20	10	5
Marks per Ques.	1	1	1	3

## LOGICAL REASONING

1. Rearrange the following letters to make a single word and then choose the category to which it belongs.

**F G O R**

- (A) City
- (B) Animal
- (C) Vegetable
- (D) Person

2. Joy wants to save ₹ 50 to buy a pair of roller blades. He plans to save ₹ 2 in the first month, ₹ 4 in the second month, ₹ 6 in the third month, and ₹ 8 in the fourth month.

Month	Amount saved during month	Total savings
1	₹ 2	₹ 2
2	₹ 4	₹ 6
3	₹ 6	₹ 12
4	₹ 8	₹ 20
•	•	•
•	•	•
•	•	•

If Joy continues this savings pattern, how many months will Joy take to save ₹ 50 ?

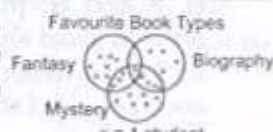
- (A) 5 months
- (B) 7 months
- (C) 9 months
- (D) 13 months

3.  $\triangle \triangle = \square \triangle \square, \triangle \square = \bigcirc \bigcirc, \triangle = 50$

Using the diagram above, which of the following statements is true?

- (A)  $\bigcirc < \triangle$
- (B)  $\square > \bigcirc$
- (C)  $\triangle < \square$
- (D)  $\triangle < \bigcirc$





4. According to the diagram, how many students have more than one favourite type of book?



- (A) 3
- (B) 5
- (C) 7
- (D) 8



## MATHEMATICAL REASONING

5. In Parul's garden, there are 25 rows of vegetables. She has five more rows of peppers than tomatoes and two fewer rows of cucumbers than tomatoes. If  $y$  represents the number of rows of tomatoes in the garden, which number sentence can be used to find how many rows of each vegetable were planted?
- (A)  $y + (y + 5) + (y + 2) + y = 25$   
 (B)  $(y + 5) + y = 25$   
 (C)  $(y + 5) + (y - 2) = 25$   
 (D)  $(y + 5) + (y - 2) + y = 25$
6. Which of the following figures have at least two lines of symmetry?
- 



- (A) Only P  
 (B) Both P and Q  
 (C) Both Q and R  
 (D) P, Q, R and S
7. Subtract 29.375 from the sum of 85.75 and 5.9.
- (A) 62.275  
 (B) 63.275  
 (C) 64.275  
 (D) 65.275
8. The five-day forecast for the South Pole lists the low temperatures (in Fahrenheit) as  $-24^\circ$ ,  $-28^\circ$ ,  $-29^\circ$ ,  $-25^\circ$ , and  $-30^\circ$ . Which choice shows the temperatures in order from the lowest to the highest?
- (A)  $-24^\circ$ ,  $-25^\circ$ ,  $-28^\circ$ ,  $-29^\circ$ ,  $-30^\circ$   
 (B)  $-30^\circ$ ,  $-28^\circ$ ,  $-29^\circ$ ,  $-25^\circ$ ,  $-24^\circ$   
 (C)  $-30^\circ$ ,  $-29^\circ$ ,  $-28^\circ$ ,  $-25^\circ$ ,  $-24^\circ$   
 (D)  $-30^\circ$ ,  $-29^\circ$ ,  $-28^\circ$ ,  $-24^\circ$ ,  $-25^\circ$
9. What is the value of the given expression?
- $$3 + 3 \times 3(4 + 3)$$
- (A) 38  
 (B) 42  
 (C) 45  
 (D) 66
10. Mohit is selling candy bars. He has chocolate bars, nut bars, and mint bars. If a customer buys two bars, and the bars are not of the same type, how many different combinations are possible?
- (A) 3  
 (B) 6  
 (C) 9  
 (D) 12

## EVERYDAY MATHEMATICS

11. Vinita can type 28 words per minute. At this rate, how many words can Vinita type in 5.5 minutes?
- (A) 154  
 (B) 157  
 (C) 159  
 (D) 162
12. At a school, there are 704 desks to place into 22 classrooms. If the same number of desks is placed in each classroom, how many desks will be there in each room?
- (A) 32  
 (B) 34  
 (C) 42  
 (D) 44
13. A vessel has 5 litres 120 millilitres of mango shake. How many glasses each of 40 ml capacity, can be filled with it?
- (A) 122  
 (B) 130  
 (C) 118  
 (D) 128

## ACHIEVERS SECTION

14. Fill in the blanks:
- (i) The opposite sides of a parallelogram are P and Q.
- (ii) A quadrilateral having only one pair of opposite sides parallel is called a R.
- (iii) A parallelogram having all the sides equal is called a S.
- |     | P     | Q            | R         | S       |
|-----|-------|--------------|-----------|---------|
| (A) | Equal | Parallel     | Rectangle | Rhombus |
| (B) | Equal | Non-parallel | Trapezium | Kite    |
| (C) | Equal | Parallel     | Trapezium | Rhombus |
| (D) | Equal | Parallel     | Trapezium | Kite    |
15. Study the statements given below and choose the correct answer.
- Statement 1 :** Numbers having more than two factors are known as composite numbers.
- Statement 2 :** A number for which sum of all its factors is equal to twice the number is called a perfect number.
- (A) Statement-1 is true and statement-2 is false.  
 (B) Statement-1 is false and statement-2 is true.  
 (C) Both statements are true.  
 (D) Both statements are false.





SOF INTERNATIONAL  
ENGLISH OLYMPIAD

Total Questions : 50

Time : 1 hr

#### PATTERN & MARKING SCHEME

Section	(1) Word and Structure Knowledge	(2) Reading	(3) Spoken and Written Expression	(4) Achievers Section
No. of Questions		45		5
Marks per Ques.	1	1	1	3

#### SYLLABUS

**Section - 1 :** Nouns, Pronouns, Verbs, Adverbs, Adjectives, Articles, Prepositions, Punctuation and Jumbled Words, Tenses, Voices, Narration, etc. Spellings, Collocations, Phrasal verbs, Idioms, Words related to everyday problems, Relationships, Health and Medicine, Travel, etc.

**Section - 2 :** Search for and retrieve information from various text types like News headlines, Brochures, Formal and Informal letters, Itinerary, etc., Acquire broad understanding of and look for specific information in Short narratives, Time-tables, News stories, Diary entry, Poster Making, Messages etc.

**Section - 3 :** Ability to understand situation-based variations in functions like agreement and disagreement, Requests, Refusals, Apologies, etc. and also distinguish differences in the use of conjunctions.

**Section - 4 :** Higher Order Thinking Questions - Syllabus as per Sections 1, 2 and 3.

### WORD AND STRUCTURE KNOWLEDGE

**Direction : Complete the word using the letters from the options given below.**

1. The magician had clever \_\_\_\_\_ concealed several rabbits in his hat.

(A) Fully (B) Ness  
(C) Ly (D) Ity

2. Choose the correct expression.

(A) Bird in hand (B) Bird in the pocket  
(C) Bird and hand (D) Hand me the bird

3. Choose the odd phrase.

(A) Take off (B) Take on  
(C) Take up (D) Take it

**Direction : Choose the right spelling for the given sentence.**

4. The \_\_\_\_\_ is fine today. Let's go for a picnic.

(A) Weather  
(B) Wheather  
(C) Whether  
(D) Wether

5. Choose the odd pair.

(A) Cooking : Utensils  
(B) Painting : Canvas  
(C) Sailing : Anchor  
(D) Mountaineering : Paddle

6. Spot the error.

This history test is so difficult / as I think /

(A) (B)  
I'm going to fail. No error.  
(C) (D)

7. Spot the incorrect sentence.

(A) Have you ever been to Burma?  
(B) Was anybody injured in the accident?  
(C) How long have you been knowing him?  
(D) When was the telephone invented?

**Direction : Choose the right word.**

8. \_\_\_\_\_ Priya nor Seema have gone to see the movie.

(A) Each (B) Neither  
(C) Both (D) Rather

### READING

**Direction (Q. No. 9 and 10) : Read the paragraph and choose the correct options.**

Noodles were originally made using grains from millet, unlike the modern variety, which is made of wheat flour. Many cultures across the world claim to have invented it, but in 2005 the remains of the world's oldest noodles were unearthed in China. The yellow strands measuring 50 cm were found in a pot in Lajia along the Yellow River. It is believed that the pot got buried in an earth quake 4000 years ago.

9. The modern day noodles are made of \_\_\_\_\_.  
(A) Millet (B) Grains  
(C) Millet and wheat flour  
(D) Wheat flour

10. We know that noodles were made thousands of years ago in China because the \_\_\_\_\_.  
(A) Chinese claim that they invented noodles.  
(B) Oldest noodles have been discovered in China.  
(C) Historians say so.  
(D) Chinese still eat noodles.

## SPOKEN AND WRITTEN EXPRESSION

**Direction (Q. No. 11 to 13) : Choose the most suitable sentence.**

11. Asha: Why are you in such a hurry to go home today?

Tara: \_\_\_\_\_

Asha: I am sure you are eager to see her.

- (A) I will go when I like.
- (B) Going to my home is not difficult because my sister will come with me.
- (C) My aunt is coming home from London after two years.
- (D) I am always in a hurry to go home.

12. Asif: Arun, where were you yesterday? I had come home and I found it locked.

Arun: \_\_\_\_\_

Asif: I hope you found her hale and hearty.

- (A) I like going out for long walks with my dog.
- (B) I'd gone to visit my grandmother along with my parents.

(C) We could have gone cycling along orchard road.

(D) My house was locked throughout this summer.

13. Sentence 1 : The Amazon river is the largest river in the world with a total river flow greater than the next ten largest rivers combined.

Sentence 2 : \_\_\_\_\_

Sentence 3 : Because of its vast dimensions, it is sometimes called The River Sea.

- (A) However, in terms of length it is slightly shorter than the Nile.
- (B) The Amazon river is surrounded by thick rain forest.
- (C) Hundreds of people use the Amazon river to transport goods.
- (D) The Amazon river is in South America.

## ACHIEVERS SECTION

**Direction : Choose the best word to complete the sentence.**

14. She \_\_\_\_\_ really well for herself since she moved out of the village.

- (A) Has been done
- (B) Has been doing
- (C) Has done
- (D) Has been

15. What does 'a blessing in disguise' mean?

- (A) To be blessed.
- (B) To attend a prayer meeting.
- (C) Something good that isn't recognised at first.
- (D) None of the above.

SPACE FOR ROUGH WORK

## ANSWERS

- NCO - 1. (A) 2. (C) 3. (C) 4. (C) 5. (C) 6. (D) 7. (D) 8. (D) 9. (D) 10. (B) 11. (A) 12. (D) 13. (B) 14. (A) 15. (B)
- NSO - 1. (C) 2. (B) 3. (C) 4. (C) 5. (A) 6. (B) 7. (D) 8. (D) 9. (B) 10. (B) 11. (C) 12. (A) 13. (D) 14. (C) 15. (D)
- IMO - 1. (B) 2. (B) 3. (A) 4. (D) 5. (D) 6. (D) 7. (A) 8. (C) 9. (D) 10. (A) 11. (A) 12. (A) 13. (D) 14. (C) 15. (C)
- IEO - 1. (C) 2. (A) 3. (D) 4. (A) 5. (D) 6. (B) 7. (C) 8. (B) 9. (D) 10. (B) 11. (C) 12. (B) 13. (A) 14. (C) 15. (C)