SOF

SCIENCE OLYMPIAD FOUNDATION

Sample Paper

SYLLABUS 2015-16

CLASS 4

NCO
SOF NATIONAL CYBER OLYMPIAD

Total Questions : 35 | Time : 1 hr.

PATTERN & MARKING SCHEME			
Section	(1) Logical Reasoning	(2) Computers & IT	(3) Achievers Section
No. of Questions	5	25	5
Marks per Ques.	1	1	2

SYLLABUS

Section – 1 : Patterns, Alphabet Test, Coding-Decoding, Mirror Images, Embedded Figures, Geometrical Shapes and Solids, Ranking Test, Direction Sense Test, Days and Dates & Possible Combinations, Analogy and Classification.

Section – 2 : About Computers (General Information), Evolution of Computers, Parts of Computer, Input and Output Devices, Hardware, Software, MS-Word(Formatting a Word document, Font group, Format Painter, Search using Find and Replace option, Checking Spelling and Grammar using Thesaurus), Using Windows, Introduction to Internet and Its Uses, Computer Networks, MS-Paint, 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.

NSO
SOF NATIONAL SCIENCE OLYMPIAD

Total Questions : 35 | Time : 1 hr.

PATTERN & MARKING SCHEME			
Section	(1) Logical Reasoning	(2) Science	(3) Achievers Section
No. of Questions	5	25	5
Marks per Ques.	1	1	2

SYLLABUS

Section – 1 : Patterns, Alphabet Test, Coding-Decoding, Mirror Images, Embedded Figures, Geometrical Shapes and Solids, Ranking Test, Direction Sense Test, Days and Dates & Possible Combinations, Analogy and Classification.

Section – 2 : Plants, Animals, Food and digestion, Clothing, Matter and Materials, Force, Work and Energy, Our Environment, Earth and Universe.

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

IMO
SOF INTERNATIONAL MATHEMATICS OLYMPIAD

Total Questions : 35 | Time : 1 hr.

PATTERN & MARKING SCHEME				
Section	(1) Logical Reasoning	(2) Mathematical Reasoning	(3) Everyday Mathematics	(4) Achievers Section
No. of Questions	10	10	10	5
Marks per Ques.	1	1	1	2

SYLLABUS : Numerals and Number Names (5 digit numbers), Place Value, Roman Numerals, Addition and Subtraction, Geometry : Square, Rectangle, Circle, Closed and Open Figure, Multiplication and Division, Factors and Multiples, Fractions, Measurement, Pictorial Representation of Data, Money, Time, Weight and Capacity, Series and Pattern Formation of Numbers and Figures, Conversions, Comparison, Perimeter of Various Shapes, Direction Sense Test, Mirror Images, Embedded Figures, Number Ranking, Alphabetical Test, Coding-Decoding, Mathematical Reasoning, Symmetry.

Achievers Section : Higher Order Thinking Questions - from the above given Syllabus.

IEO
SOF INTERNATIONAL ENGLISH OLYMPIAD

In association with ●● BRITISH ●● COUNCIL

Total Questions : 35 | 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		30		5
Marks per Ques.	1	1	1	2

SYLLABUS

Section – 1 : Collocations, Spellings, Words related to animals, Household things, Clothes, Basic emotions, Food and Animals, etc. Synonyms, Antonyms, Nouns, Pronouns, Verbs, Adverbs, Adjectives, Contractions, Articles, Prepositions, Conjunctions, Tenses, Punctuations and Jumbled words, Basic Questions etc.

Section – 2 : Search for and retrieve information from various text types like stories, Anecdotes, etc., Understand information through pictures, Time table format, etc., Acquire broad understanding of and look for specific information in short texts like messages, Invitations, etc.

Section – 3 : Ability to understand situation-based variations in functions like apology, greeting, introduction, request, etc.

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

N C O National Cyber Olympiad

LOGICAL REASONING

1. What is the next number in the pattern below?

125, 150, 175, 200, ...?....

(A) 205   (B) 215   (C) 225   (D) 250

2. Choose the correct mirror image of the word, if the mirror is placed vertically to the left.

FIXING

(A) GNIXIF   (B) bИIXIꟻ   (C) bИIXIF   (D) GNIXIꟻ

3. In a certain code, 3456 is coded as ROPE, 15526 is coded as APPLE, then how is 54613 coded?

(A) RPPEO   (B) ROPEA   (C) POEAR   (D) PAREO

COMPUTERS AND INFORMATION TECHNOLOGY

4. Internet can be used for _____.

(A) Checking exam results   (B) Chatting

(C) E-mailing   (D) All of these

5. When your desktop is cluttered with open windows, you can use _____ to select a single window and minimize the rest.

(A) Aero Peek   (B) Aero Shake   (C) Aero Steer   (D) Aero Flip

6. Without this we cannot interact with a computer. What is this?

(A) Scanner   (B) Input device   (C) MICR   (D) Printer

7. This key is used to move cursor to the beginning of the line or the screen depending on the software used. Identify the key.

(A) [End]   (B) [Home]   (C) [⊕]   (D) [Page Down]

8. 1024 bytes equals _____.

(A) 1 Kilobyte (KB)   (B) 1 Megabyte (MB)

(C) 1 Gigabyte (GB)   (D) 1 Character

9. Who among the following is known as father of computers?

(A) Charles Babbage   (B) John Napier

(C) Blaise Pascal   (D) Lady Ada Augusta Lovelace

10. While working with MS-Paint which option is used to add name to your drawing?

(A) Text tool   (B) Pencil tool   (C) Air brush tool   (D) Erase tool

11. Which of the following is a correct internet address?

(A) ww.yahoo.com   (B) www.cartoonnetwork.co

(C) www.hotmail.com   (D) www.indiatime.comm

12. In MS-Word, which colour wavy line under a word indicates a spelling or grammar mistake?
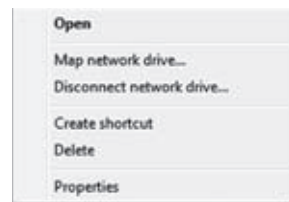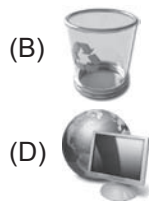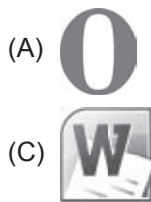
(A) Red   (B) Green   (C) Yellow   (D) Both (A) and (B)

13. Internet is used for audio and video calling across geographies. A popular tool for such internet calls is _____.
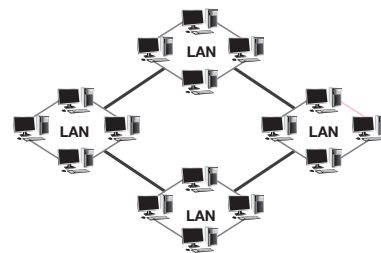
(A) skype   (B) Google   (C) YAHOO!   (D) ebay

14. A pop-up menu is displayed when we do right click on a desktop icon. Which of the following options holds the pop-up menu depicted in the given image in Windows 7?

(A)

(B)

(C)

(D)

15. Which of the following types of network is used to connect the LANs shown in the given image?
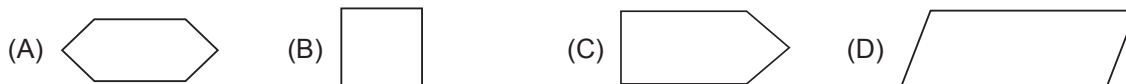
(A) CAN

(B) PAN

(C) WAN

(D) SAN

N S Q National Science Olympiad

LOGICAL REASONING

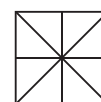**1.** Namita drew a figure with 4 square corners. Which could be the figure she drew?

(A)   (B)   (C)   (D)

2. Which could be one of the faces of a cylinder?

(A)   (B)   (C)   (D)

3. The number of squares in the figure is _____.
(A) 5   (B) 6
(C) 4   (D) None of these

SCIENCE

4. Study the given graph carefully.
The line QR shows the _____ stage of the mosquito.
(A) Egg
(B) Larval
(C) Pupal
(D) Adult
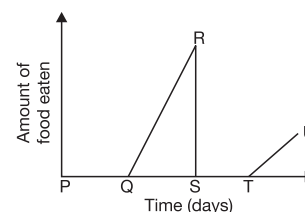
**5.** Refer to the given figure. Which of the following cannot be X?
(A) Oxygen   (B) Carbon dioxide
(C) Water   (D) None of these
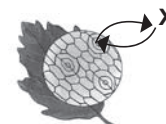
6. The energy an object gets from its motion is
(A) Electrical energy   (B) Chemical energy
(C) Kinetic energy   (D) Potential energy.

7. Shashank filled a communicating vessel with water as shown in the picture. Then he tilted the vessel to left by putting a block under its right end. Which of the following options is the best illustration to show the water level in the vessel?

Communicating vessel

(A) (B) (C) (D)
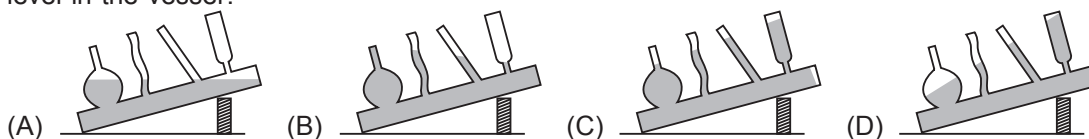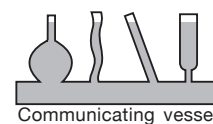
8. How long does the Earth take to make one complete revolution around the Sun ?
(A) 24 hours (B) 28 hours (C) 240 days (D) 365 days

9. Arjun wants to lift the rock as shown in the figure. At which point should he apply the force so that he could lift the rock easily ?
(A) a
(B) b
(C) c
(D) d
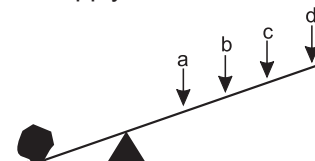
10. Which of the following statements hold true regarding the given plants X and Y?
1. Plant X depends partly on animals for food but can also make its own food while plant Y cannot make its own food.
2. Plant X has chlorophyll while plant Y does not contain chlorophyll and is non-green.
3. In plant X, food is prepared by the green stem, whereas plant Y obtains its food from dead and decaying plants and animals.
4. Plant X and plant Y have patches of green colour. Only green part of their leaves performs photosynthesis.
(A) 1, 3 and 4 (B) 2 and 3 (C) 1 and 4 (D) 3 and 4

11. The teeth which are marked X in the given figure are known as
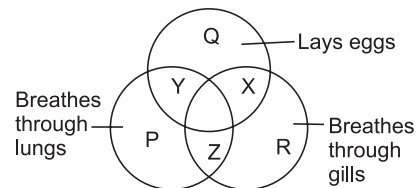(A) Incisors
(B) Canines
(C) Premolars
(D) Molars
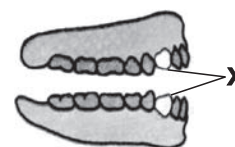
12. Amongst the given birds, which one has climbing claws with two toes in the front and two behind?

(A) (B) (C) (D)

13. Study the following Venn diagram carefully.
Which letter represents the hen?
(A) Y
(B) X
(C) Z
(D) R

Lays eggs
Breathes through lungs
Breathes through gills

ACHIEVERS SECTION

14. The given graph shows the changes in amount of undigested food as it progresses through the alimentary canal. Select the INCORRECT option regarding the parts labelled as P, Q, R, S and T.
(A) Q and T are oesophagus and large intestine respectively.
(B) P represents mouth where about 30% of carbohydrate is digested.
(C) S is small intestine, where both digestion and absorption takes place.
(D) R is stomach, the primary site of digestion of carbohydrate and protein.

Amount of undigested food
P Q R S T
Parts of digestive system
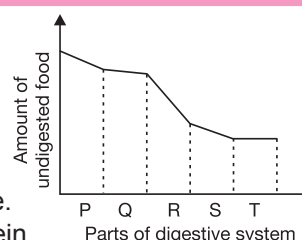
15. 100 gms of three types of soil were put in a funnel and each funnel was put on an empty beaker using stands. Then 60 mL water was poured over each of them. The result is shown in the given figure. Identify the soil types and select the correct option.

(A) X is clay and Y is gravel.

(B) Y is gravel and Z is sand.

(C) X is sand and Y is clay.

(D) Y is sand and Z is clay.
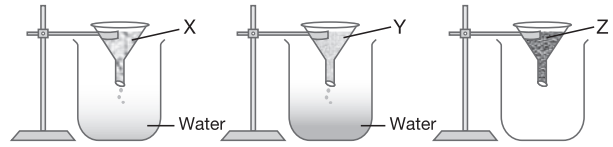

I M O International Mathematics Olympiad

LOGICAL REASONING

1. What is the rule for this number pattern?

1, 1, 2, 6, 24, 120, . . .

(A) Add 0, then add 1, then add 2, and so on

(B) Multiply by 1, then multiply by 2, then multiply by 3, and so on

(C) Multiply by 1, then add 1

(D) Multiply by two, then subtract 1

2. There are four figures out of which three are same in some way while one is different from the rest. Find out the different figure.

(A)   (B)   (C)   (D)
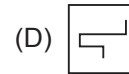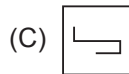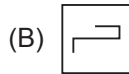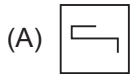
3. Count the number of straight lines in the given figure.

(A) 17

(B) 18

(C) 19

(D) 20

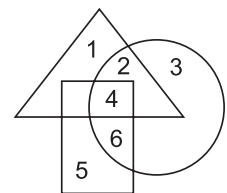**4.** If in a certain code "MONKEY" is coded as 'YEKNOM', then how is 'MONIKA' coded in that language?

(A) KANIMO (B) AKINOM (C) NOMIKA (D) AIKONIM

5. Which number lies in all the three figures?
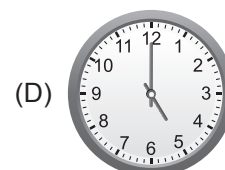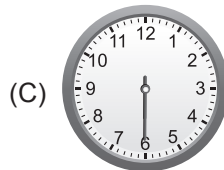
(A) 1

(B) 2

(C) 4

(D) 5

MATHEMATICAL REASONING
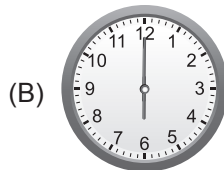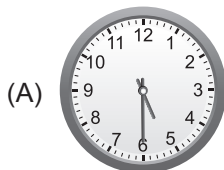
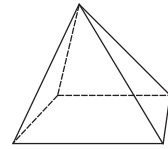**6.** If ◇ × 4 = ☆ and ☆ − ◇ = 330, then ☆ + ◇ =

(A) 110 (B) 440 (C) 550 (D) 990

7. Mohit went for swimming at 2:30 p.m. and returned back home $3\frac{1}{2}$ hours later. The time he came back home is _____.

(A)   (B)   (C)   (D)

8. How many vertices does this pyramid have?

(A) 4   (B) 5

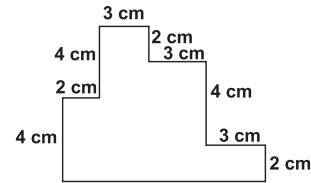(C) 6   (D) 8

9. There are _____ tens in 36520.

(A) 12   (B) 36   (C) 365   (D) 3652

10. The perimeter of the given figure (not drawn to scale) is _____.

(A) 35 cm

(B) 27 cm

(C) 38 cm

(D) 42 cm

EVERYDAY MATHEMATICS

11. There are 3 rows of strawberry plants. Each row has 6 plants. How many strawberry plants are there in all?

(A) 9   (B) 18   (C) 22   (D) 24

12. Ram, Rahul and Rohit shared a bag of marbles. The bag contained 272 marbles. How many marbles were left over after the friends shared them equally?

(A) 90   (B) 91   (C) 6   (D) 2

13. There were 3856 trees in a forest. In another forest, there were 4795 trees. How many more trees were there in the second forest?

(A) 930   (B) 939   (C) 1689   (D) 1600

ACHIEVERS SECTION

14. Find the value of $\dfrac{P-Q+R}{S}$.

(A) 3

(B) 4

(C) 6

(D) 7

15. The given bar graph shows the favourite ice-cream flavours of a group of children. _____ of the children prefer strawberry flavour.

(A) 1/4

(B) 1/5

(C) 1/6

(D) 4/15
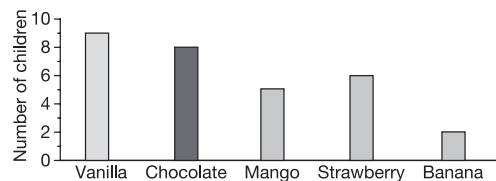
IEO International English Olympiad

WORD AND STRUCTURE KNOWLEDGE

Direction : Choose the right word.

1. I build bridges. I am _____.

(A) A plumber   (B) An engineer   (C) A carpenter

2. Choose the odd one.
(A) Sandals   (B) Shoes   (C) Scarves

3. Find the incorrect sentence.
(A) Tina is watching television.   (B) I lose my pen yesterday.
(C) I like playing football.

4. Choose the odd pairs.
(A) Doctor : Stethoscope   (B) Carpenter : Hammer
(C) Mason : Scissors

Direction : Complete the word using the letters from the given option.

5. When the boy whistled, the dog __ willingly let go of the bone.
(A) Un   (B) In   (C) Im

Direction (Q. No. 6 to 8) : Fill in the blanks.

6. Ann always _____ a lot of mistakes when she speaks English.
(A) Make   (B) Makes   (C) Made

7. _____ of the girls in the class did not want to play football.
(A) Little   (B) Much   (C) Some

8. I am looking forward _____ the birthday party.
(A) With   (B) On   (C) To

Direction : Complete the sentence with the correct spelling of the word.

9. My brother travelled to South Korea recently. He likes visiting _____ countries.
(A) Phoreign   (B) Foreign   (C) Foriegn

READING

Direction (Q. No. 10 and 11) : Read the paragraph and choose the correct sentence.

Red woods are among the world's tallest trees. They grow 200 to 300 feet high. The wood, when cut remains remarkably free from decay caused by weather and insects. So, it is used to build houses and even outdoor furniture.

10. (A) No tree is taller than the red wood tree.
(B) Red wood trees grow very tall.
(C) Trees grow tall all over the world.

11. (A) Red wood tree can be easily destroyed by insects.
(B) Red wood trees decay easily.
(C) Red wood trees are suitable for making long lasting park benches.

SPOKEN AND WRITTEN EXPRESSION

Direction (Q. No. 12 and 13) : Choose the right answer.

12. Imran : When does the train for Baroda leave?
Official : _____
(A) Maybe, in a week or so.
(B) In an hour from platform number 5.
(C) Just turn around and walk to the end of the road.

13. Sentence 1 : A biography is written by a person about the life and activities of another person.
Sentence 2 : _____
(A) Whereas an autobiography is written by a person about his own life.
(B) Gandhiji wrote an autobiography called *My Experiments with Truth.*
(C) People write autobiographies about their own lives.

Direction (Q. No. 14 and 15) : Choose the correct word/phrase to complete the sentences.

14. I missed _____ two days out of the ten days training because I was ill.

    (A) The   (B) Only   (C) All

15. Louise : How often do the buses go to town?

    Isabel : _____ ten minutes.

    (A) All   (B) Each   (C) Every

SPACE FOR ROUGH WORK

ANSWERS

National Cyber Olympiad			National Science Olympiad			International Mathematics Olympiad			International English Olympiad		
1. (C)	2. (B)	3. (C)	1. (B)	2. (B)	3. (A)	1. (B)	2. (D)	3. (B)	1. (B)	2. (C)	3. (B)
4. (D)	5. (B)	6. (B)	4. (B)	5. (C)	6. (C)	4. (B)	5. (C)	6. (C)	4. (C)	5. (A)	6. (B)
7. (B)	8. (A)	9. (A)	7. (A)	8. (D)	9. (D)	7. (B)	8. (B)	9. (D)	7. (C)	8. (C)	9. (B)
10. (A)	11. (C)	12. (D)	10. (B)	11. (B)	12. (D)	10. (C)	11. (B)	12. (D)	10. (B)	11. (C)	12. (B)
13. (A)	14. (D)	15. (C)	13. (A)	14. (D)	15. (D)	13. (B)	14. (B)	15. (B)	13. (A)	14. (B)	15. (C)