

## SAMPLE PAPER 2014-15

<u>CLASS</u>

The actual test paper has 50 questions. Time allowed: 60 minutes. There are 3 sections: 15 questions in section I, 30 in section II and 5 in section III.

#### **SYLLABUS**



Section — I (Logical Reasoning): Verbal and Non-Verbal Reasoning.

**Section – II (Computers and IT):** Basics of IT, Operating System, Word Processing Tool, Networking, Multimedia, MS-PowerPoint, HTML, Internet, MS-Excel, Hardware, Software, Input & Output Devices, Memory & Storage Devices, Latest Developments in the field of IT.

Section — III (Achievers Section ): Syllabus as per Section II.

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

The actual test paper has 50 questions. Time allowed: 60 minutes. There are 3 sections: 15 questions in section I, 30 in section II and 5 in section III.

#### **SYLLABUS**



Section – I (Logical Reasoning): Verbal and Non-Verbal Reasoning.

**Section – II (Science):** Chemical Reactions and Equations, Acids, Bases and Salts, Metals and Non-metals, Carbon and its Compounds, Periodic Classification of Elements, Life Processes, Reproduction in Organisms, Heredity and Evolution, Light-Reflection and Refraction, Human Eye and Colourful World, Electricity, Magnetic Effects of Electric Current, Sources of Energy, Our Environment and its Management.

**Section – III (Achievers Section ):** Syllabus as per Section II.

The actual test paper has 50 questions. Time allowed: 60 minutes. There are 4 sections: 15 questions in section I, 20 in section II, 10 in section III and 5 in section IV.

#### **SYLLABUS**



Section – I (Logical Reasoning): Verbal and Non-Verbal Reasoning.

**Section – II (Mathematical Reasoning) :** Real Numbers, Polynomials, Pair of Linear Equations in Two Variables, Quadratic Equations, Arithmetic Progressions, Triangles, Coordinate Geometry, Introduction to Trigonometry, Some Applications of Trigonometry, Circles, Constructions, Areas Related to Circles, Surface Areas and Volumes, Statistics, Probability.

**Section III (Everyday Mathematics):** The Syllabus of this section will be based on the syllabus of Mathematical Reasoning and Quantitative Aptitude.

Section – IV (Achievers Section): Syllabus as per Section II.

The actual test paper consists of 50 questions. Time allowed: 60 minutes. There are 4 sections.

## IE

INTERNATIONAL ENGLISH OLYMPIAD

#### **SYLLABUS**

**Section – I (Word and Structure Knowledge):** Concord, Question forms, Tenses, Conditionals, Modals, Collocations, Phrasal verbs, Idioms, Homonyms and homophones, Words related to weather, Countries, Language and people, Global problems, etc.

**Section – II (Reading)**: Search for and retrieve information from various text types like Encyclopedias, Dictionaries, etc., Understand information presented in instruction manual format, Message format and others, Acquire broad understanding of and look for specific information in longer texts like editorials, Essays, etc., Make inferences from advanced texts

**Section – III (Spoken and Written Expression) :** Ability to understand situation-based variations in functions like Giving/accepting compliments, Agreeing, Disagreeing, Requesting, Seeking information, etc.

Section – IV (Achievers Section): Syllabus as per Sections I, II and III.

IN ASSOCIATION WITH



# National Cyber Olympiad

#### LOGICAL REASONING

1.	In a group of five people, K, L and M are ambitious, M, N and R are honest, L, M and N are intelligent and K, M and R are industrious. Among these, neither industrious nor ambitious person(s) would include(A) K alone (B) L and R (C) M and N (D) N alone
2.	How many such pairs of digits are there in the number 95137248 each of which has as many digits between them in the number as when they are arranged in ascending order?  (A) One  (B) Two  (C) Three  (D) More than three
3.	If in a certain code, TWENTY is written as 863985 and ELEVEN is written as 323039, how is TWELVE written in that code? (A) 863203 (B) 863584 (C) 863903 (D) 863063
4.	A, B, C, D, E, F and G are members of a family consisting of four adults and three children, two of whom F and G are girls. A and D are brothers and A is a doctor. E is an engineer married to one of the brothers and has two children. B is married to D and G is their child. Who is C?  (A) G's brother  (B) F's father  (C) E's daughter  (D) A's son
5.	How many such vowels are there in the given arrangement which are immediately preceded as well as immediately followed by a consonant?  THAJKRBTAEMDGSOJKUMBDLUHYACM  (A) One (B) Two (C) Three (D) More than four
6.	Five students participated in an examination and each scored different marks. Nidhi scored highe than Mamta. Kavita scored lower than Prashant but higher than Nidhi. Anil's score was between Mamta and Nidhi. Which of the following pairs represents the highest and the lowest scorers respectively (A) Nidhi, Kavita (B) Kavita, Mamta (C) Prashant, Mamta (D) Anil, Kavita
	COMPUTERS AND INFORMATION TECHNOLOGY
7.	Which protocol is used when an e-mail is delivered from a client or an e-mail server to another e mail server? It uses TCP port 25 by default.  (A) IMAP  (B) POP  (C) SMTP  (D) POP3
8.	A high end graphics card used for power gaming can be installed on the motherboard in
9.	<script></script> tag can be placed within  (A) Head (B) Body (C) Both (A) and (B) (D) None of these
10.	The processing speed of a computer is measured in  (A) Mega byte (B) 16 bit (C) Mega hertz (D) Milli seconds
11.	While working in MS-Excel cell address \$A4 in a formula means it is a  (A) Mixed cell reference  (B) Absolute cell reference  (C) Relative cell reference  (D) Initial cell reference
12.	What is the function of an operating system?  (A) Manages computer's resources very efficiently.  (B) Takes care of scheduling jobs or execution.  (C) Manages the flow of data and instructions.  (D) All of these

40	la MO Decree Delat the	al affective to a second contract				
13.	In MS PowerPoint, the (A) 1.0	(B) 1.5		2.0	(D)	2.5
14.	In MS-Word, endnotes (A) Home	and footnotes are avai (B) References		tab.	(D)	Margins
15.	Which of the following (A) Mouse (C) Chip	is NOT a hardware con	(B)	t? MS-Office Semiconductor	memory	
	N S Q	Nationa			Ol	ympiad
		LOGIC	AL REA	SONING		
1.	km. He then turns rig		35 km direction	. Finally, he turr	ns right a	ght and walks another 40 and walks 20 km. How far 35 km, North
2.	Eight friends P, Q, F the right of Q and is of S. U is between 0	R, S, T, U, V and W a second to the left of F Q and T. P is not on t ng is the correct posi ate left of V	re sittir R. Q is s the left	ng around a circ second to the let of R.	ele facing ft of T ar	g the centre. V is third to not on the immediate right at of V
3.	Pointing to a photog How is the man rela	raph a woman says : ted to the woman?	"He is	the only son of	the wife	of my husband's father".
4.	(A) Son Find the mirror imag	(B) Son-in-law ge of Fig. (X) from am	(C) nongst	Brother-in-law the options, if the	• ,	Husband or is placed to the right of
	Fig. (X).	(B)	Fig. (X		(D)	
5.	If the position of the f	s based on the 5 three 517 394 irst and the second dig be the third digit of th	823 gits in ea	976 465 ach of the above		rs are interchanged, which
	(A) 7	(B) 4	(C)		(D)	6
			SCIENC	E		
6.	Transpiration has been Which of the following (i) Absorption of min (iii) Wilting and injury (A) (i) & (iv)	are the after-effects of eral salts.	transpii (ii)		ant temp	le, but potentially harmful. perature. All of these
7.	A virtual image is form (A) Between focus and (C) At infinity	ed by a concave mirror d centre of curvature		object is placed Beyond C Between focus	and pole	

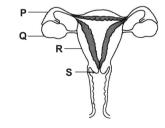
- 8. No heat loss occurs during flow of charge in super conductors because
  - (A) Speed of charge is slow in it
- (B) It is bad conductor of heat

(C) It offers zero resistance

- (D) It generates very small voltage
- 9. How do we know that fission isn't responsible for the sun's energy?
  - (A) Fission doesn't produce enough energy per gram of fuel
  - (B) If fission were going on in the sun, the sun would explode
  - (C) If fission were going on in the sun, the sun's mass would increase
  - (D) There isn't very much fissionable material in the sun.
- 10. During calcination of the ore
  - (A) The lower oxides are converted into higher oxides
  - (B) The metal gets oxidised to its highest oxide
  - (C) Volatile impurities are expelled
  - (D) Sulphur present in the ore is converted into SO<sub>2</sub>
- 11. Which of the following statements is true with respect to diamond?
  - (A) The carbon atoms are connected to each other by metallic bonds.
  - (B) In the diamond crystal, the carbon atoms are very loosely packed.
  - (C) Each carbon atom in the crystal is surrounded by four others forming a rigid 3-D.
  - (D) Diamond can be synthesised by subjecting pure carbon to very low pressure and temperature.
- **12.** When the stopper of a bottle containing colourless liquid was removed, the bottle gave a smell like that of vinegar. The liquid in the bottle could be:
  - (A) Hydrochloric acid solution
- (B) Sodium hydroxide solution

(C) Acetic acid solution

- (D) Saturated sodium bicarbonate solution.
- 13. Which of the following statements regarding natural selection is true?
  - (A) It is a process in which members of a population inherit traits that enable them to better survive and produce offspring
  - (B) It is based on the isolation of natural populations and selective breeding of organisms
  - (C) It provides diversity without any adaptation
  - (D) All of the above.
- **14.** Which one yields more energy?
  - (A) Direct burning of cowdung
- (B) Burning of biogas derived from cowdung
- (C) Burning of manure derived from cowdung
- (D) Burning of semidecayed cowdung
- **15.** In which labelled part of the given figure does the fertilization of an ovum by a sperm take place?
  - (A) P
  - (B) Q
  - (C) R
  - (D) S





### International Mathematics Olympiad

#### LOGICAL REASONING

- 1. Arrange the given word in the sequence in which they occur in the dictionary and then choose the correct sequence.
  - 1. Page
- 2. Pagan
- 3. Palisade
- 4. Pageant

- Palate
- (A) 1, 4, 2, 3, 5
- (B) 2, 4, 1, 3, 5
- (C) 2, 1, 4, 5, 3
- (D) 1, 4, 2, 5, 3

What should come at the place of '?' so that every column or diagonal has the same sum? (A) 19 (B) 12 (C) 13 (D) 15 Magic Hexagon Mohit was looking for his father. He went 90 metres in the East before turning to his right. He went 20 metres before turning to his right again to look for his father at his uncle's place 30 metres from this point. His father was not there. From here he went 100 metres to the North before meeting his father in a street. How far did the son meet his father from the starting point? (B) 100 metres (D) 260 metres (A) 80 metres (C) 140 metres 4. If + stands for 'division', × stands for 'addition', – stands for 'multiplication' and ÷ stands for 'subtraction', then which of the following equations is correct? (A)  $36 \times 6 + 7 \div 2 - 6 = 20$ (B)  $36 \div 6 + 3 \times 5 - 3 = 45$ (C)  $36 + 6 - 3 \times 5 \div 3 = 24$ (D)  $36 - 6 + 3 \times 5 \div 3 = 74$ **MATHEMATICAL REASONING** 5. If O is the centre of the circle, find the value of x in the given figure. (A) 75° (B) 40° (C) 65° (D) 90° In the following systems of equations determine the value of k for which the given system of equations has a unique solution: 2x - 3y = 1kx + 5y = 7Given that  $\angle CAB = 90^{\circ}$  and  $AD \perp BC$ . If AC = 75 cm, AB = 1 m and BD = 1.25 m, find AD. (A) 81.83 cm (B) 125 cm (C) 75 cm 93.75 cm If the mean of the following distribution is 54, find the value of p: 0-20 20-40 40-60 60-80 80-100 Class 9 р 10 13 Frequency (A) 9 (B) 11 (C) 8 (D) 10 **9.** If the HCF of 210 and 55 is expressible in the form 210  $\times$  5 + 55y, find y. (B) -15 (C) 14 (D) -19 **10.** If sum of the squares of zeros of the quadratic polynomial  $f(x) = x^2 - 8x + k$  is 40, find the value of k. (A) 11 (B) 12 (C) 10 (D) 9 11. The sum of three numbers in A.P. is -3, and their product is 8. Find the numbers. (A) 2, -1, -4(B) -4, -1, 2(C) 4, -1, -2(D) Both (A) and (B) 12. A copper sphere of diameter 18 cm is drawn into a wire of diameter 4 mm. Find the length of the wire. (C) 243 m (A) 240 m (B) 242 m (D) 245 m **EVERYDAY MATHEMATICS** 13. Three ducks and two ducklings weigh 32 kg. Four ducks and three ducklings weigh 44 kg. All ducks weigh the same and all ducklings weigh the same. What is the weight of two ducks and one duckling?

(C) 60 kg

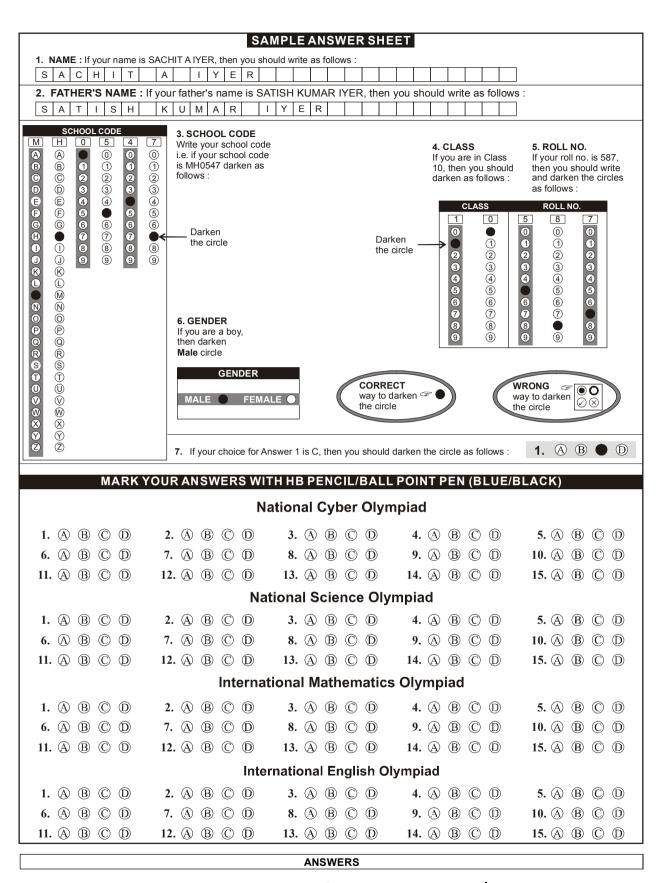
(D) 64 kg

(B) 40 kg

(A) 20 kg

14.	What is the probability the each of the given number			3,, 25 is a prime numbe	r, wher
	(A) 2/7	(B) 9/25	(C) 11/25	(D) 2/5	
15.		lume. Initially, length =		cent and reduce the width i width = 30 cm. What will t	
		(B) 20 cm	(C) 23.08 cm	(D) 23 cm	
	I E Q In			sh Olympi	ad
Div	action (O. No. 4 and 2		JCTURE KNOWLEDG		
1.	ection (Q. No. 1 and 2 We have to let the law (A) Take it course	and	wait for the court verd (C) Take a course	dict in this matter.	
2.	This colour has gone _		nion.		
	(A) Out from	(B) From	(C) Out of	(D) Off	
3.	Choose the correct spe (A) Pseudonym	elling. (B) Pseuodnym	(C) Pseudoname	(D) Seudonum	
4.	Select the correct phra (A) Take it and leave it (C) Take it or leave it		re it (D) Leave it or take	it	
	Ir options given below Mr. Prasanna is (A) Dark tall man with (B) A tall dark man fro (C) An tall dark man fro (D) With an MBA from	y the sentencea an MBA from a Guja om Gujarat with an MB rom Gujarat with a MB	and he works for a well- rat BA BA	ences by choosing one -known computer firm.	or the
6.	The Director was so (A) Angry with	(B) Angry by	team that he was at a (C) Angry about	loss for words. (D) Angry on	
7.	marked as A, B and	C. If yes, mark that not be able /to come v	letter. If no error, mounth all of us /because	of his uncle's visit /No er	•
		RE	EADING		
	that follow. Once upon a time, eve children, are scientists rocks, seeing patterns Partly because the edu partly because of societades quickly for most y learn to avoid high-school about how people think ever wanted to know.	rybody "did" science, too—testing substand in the stars, wondericational system has taty's demands for practyoungsters. Those whol biology. Students what and feel, find themse	for their own amusements on our tongues, dising what makes the nigaught science only in a tical applications of tecto love nature but dislik to enroll in psychology coloves learning more about the colores of the colores and the colores are the colores ar	ent and excitement. All of scovering gravity, peering ght scary and the sky blureductionist, left-brain sty hnology, the romance of see dissecting small animal ourses, hoping to learn son bout rats and statistics that	f us, as g under ue. yle and science ls soor nething
8.	According to the author (A) They are amused				

	<ul><li>(B) They are curious about some things.</li><li>(C) They are taught science in school.</li><li>(D) They enjoy peeping into things, tasting an</li></ul>	d wondering.	
9.		se B) They are forced to D) It is not taught in a	
10.	• •	should focus on B) Problems in statis D) Understanding hun	
	SPOKEN AND WRI	TTEN EXPRESSION	
11.	Direction (Q. No. 11 and 12): Find one sen  Namrata: Hey, come on, let's go and have sor Sujana: Sorry, I can't. I have a bad cold.  Namrata:  (A) Have a biocuit	ne ice-cream before th	ne test.
		B) Come on, ice crea D) Come on, you can	
12.	. Kartik: We're going trekking to the Narmada v	alley. Please come.	
	Nisha: I wish I could come.  (A) The trip sounds fantastic and I am sure w	 Il be great fun.	
	(B) The Narmada is a river that must be seen		
	<ul><li>(C) But my grandparents will be visiting us an</li><li>(D) It will be lovely to be with all of you for so</li></ul>		
	paragraph. Look at the choices given belo Sentence 1: What is meant beneficial for the Sentence 2: Sentence 3: Sentence 4: After 50, the toxicity of these me to diseases. P. For example, iron and copper are nutriona Q. Iron deficiency can lead to anaemia and o hormones. R. But larger amounts of their intake are goo (A) QR (B) PR (C) Sentence 1: If there is a neem or jamun tree in	tals comes into play and the second state of t	nison at another.  Indican damage cells, leading colour and is a part of several colour.  Indican damage cells, leading colour and is a part of several colour.
	when they flower and fruit.  Sentence 2:  Sentence 3:  Sentence 4: The data base is important as Inc.  P. The National Centre for Biological Sciences on the life cycle of plant species across Q. You may soon realize that you are not just w. R. There is no information, however, that sho location.	dia has several climati plans to rope in people f the country. hiling time, but collections was when a species flo	c zones and biodiversity. for creating an online database
15.	. Sentence 1 : Satnam Singh detests wheat cha	apattis.	
	Sentence 2: Sentence 3: Sentence 4: He actually suffers from a diseated P. The four year old hails from a small villaged Q. If force fed, he shouts and cries loudly. R. The boy is not throwing a temper tantrum, (A) PR (B) QP	se known as celiac or e in Punjab, from Amba or suffering from anor	ala.
	(-) -: (-) ~.	-, · <del>-</del>	<u> </u>



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