CLASS

9

SAMPLE PAPER

Science Olympiad Foundation

For Excellence in Science, Maths & IT

NATIONAL CYBER OLYMPIAD

The actual test paper has 50 questions. Time allowed : 60 minutes. There are 3 sections, 15 questions in section I, 15 in section II and 20 in section III.

SYLLABUS

Section – I (Mental ability) : Squares and square roots, Cubes and cube roots, Exponents and radicals, Algebra-identities, Division of algebraic expressions, Linear equations, Applications of percentage, Parallel lines, Special types of quadrilaterals, Construction of quadrilaterals, Chords of a circle, Angle properties of a circle, Areas of rectilinear figures, Circumference and area of a circle, Volume and surface area, Statistics.

Section – II (Logical and analytical reasoning) : Problems based on figures, Find odd numeral out, Series completion, Coding-decoding, Mathematical reasoning, Analytical reasoning, Mirror images, Embedded figures, Direction sense test, Cubes and dice.

Section – III (Computer and IT) : Technologies development of computation and computers, Hardcore of a computer, How computer languages work, How viruses and anti viruses software s work, MS word creating documents, Professional documents in MS word, Mail merge in MS word, MS excel, Charts in MS excel 2000, Power Point (Microsoft 2000), Html, World wide web (WWW), Electronic mail.

MENTAL ABILITY

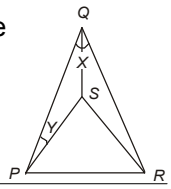
1. How many spokes are there in the wheel of a sports car if any two spokes form an angle of 15°?
(A) 12 (B) 15 (C) 22 (D) 24 (E) None of the above.

2. Two clocks are set at the same time, one is seen to gain 40 seconds and other to lose 50 seconds in 24 hours. In how much time will they show a difference of 15 minutes?
(A) 90 days (B) 10 days (C) 90 hours (D) 10 hours (E) None of these.

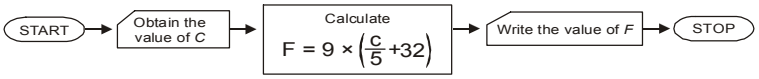
3. A girl was given two candles by her father for her birthday and was told that one candle would burn for six hours and the other, four hours. After they were both lit and allowed to burn for sometime, the girl noticed that one candle was twice as long as the other. State for how long the candles had been burning together?
(A) 2 hours (B) 3 hours (C) 4 hours (D) 5 hours (E) 6 hours.

4. Students of the psychology class in a college were getting ready to challenge and out-wit their new lecturer on her first day of teaching but became dumb-founded when she asked them to find the product of $(x - a)\ (x - b)\ (x - c)\ (x - d)$.....$(x - y)(x - z)$. What do you think is the answer?
(A) 0 (B) 1 (C) 2 (D) $x^n - (a)\ (b)\ (c)$ .....(z)
(E) None of the above.

5. In the given figure if PQR is an isoceles triangle and PSR is an equilateral triangle and $X = 26°$ then the value of Y (in degrees) will be
(A) 17 (B) 27
(C) 37 (D) 47
(E) None of these



6. To convert a given temperature in Celsius scale to Fahrenheit scale, the following flowchart is generated. Is the generated flowchart correct?



(A) Yes (B) No (C) Can't say (D) Information incomplete
(E) None of the above.

7. In which of the following quadrilaterals, the diagonals must be equal?
(A) Parallelogram (B) Trapezium (C) Rhombus (D) Square (E) None of these.

8. Each side of a rhombus is 5 cm and one of the diagonals is 8 cm. Calculate the length of another diagonal and the area of the rhombus.
(A) 8 cm, 32 cm^2 (B) 6 cm, 24 cm^2 (C) 4 cm, 16 cm^2 (D) 7 cm, 28 cm^2 (E) None of these.

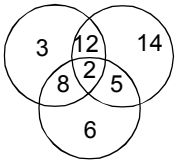
LOGICAL & ANALYTICAL REASONING

9. A country has six seaports, E, F, G, H, I and J, where ships only run from:
E to F, F to E, F to G, G to H, H to F
H to I, J to E, J to I, J to G, I to H
Passengers can transfer to different ships at the ports. If port G is closed, which of the following trips is impossible by ship?
(A) J to E (B) E to H (C) H to I (D) J to I (E) None of these.

10. **Step 1 :** Add 4
Step 2 : Subtract 1
Step 3 : If less than 15, jump to step 1 and continue from there; otherwise proceed to step 4
Step 4 : Add 3
Step 5 : If greater than 18, subtract 2
If you start with a value of 1 and then apply the above instructions, what is the end result?
(A) 11 (B) 17 (C) 18 (D) 19 (E) None of these.

11. On planet X, the local terminology for earth, water, light, air and sky are light, air, earth, sky and water respectively. If someone is thirsty there, what would he drink?
(A) Sky (B) Water (C) Air (D) Light (E) None of these.

12. Consider the given Venn diagram
The numbers in the Venn diagram indicate the number of persons reading the newspapers. The diagram is drawn after surveying 50 persons.
In a population of 10,000 how many can be expected to read at least two newspapers?

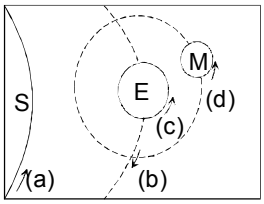


(A) 5000 (B) 6250 (C) 6000 (D) 5400
(E) None of these.

13. Consider the given diagram :

Which one of the four directions of movement as shown by arrows (a), (b), (c) and (d) is wrong ?

(A) Direction of the rotation of the Sun
(B) Direction of the revolution of the Earth
(C) Direction of the rotation of the Earth
(D) Direction of the revolution of the Moon
(E) None of the above.



S = Sun, E = Earth, M = Moon.
→ Direction of Movement

COMPUTER & INFORMATION TECHNOLOGY

14. Match the following

Set I is equal to	**Set II**
1. 1 Kilobyte	A. 1024 bytes
2. 1 Megabyte	B. 1024 GB
3. 1 Gigabyte	C. 1024 KB
4. 1 Terabyte	D. 1024 MB

(A) 1A, 2C, 3D, 4B (B) 1B, 2D, 3A, 4C (C) 1C, 2A, 3B, 4D
(D) 1D, 2B, 3C, 4A (E) None of these.

15. In computer science, by information we mean
(A) Any output coming out from computer (B) Processed data put in an intelligent form
(C) A report printed by the computer (D) Plural of data
(E) None of these.

16. What does a disc fragmentor do?
(A) It is a utility program that facilitates compression of files so that they occupy less storage space
(B) It is a utility program that minimizes the time taken by the hard disk optical reader to read up 'split' files. It does so by rearranging the files and free space on your computer so that files are stored in contiguous memory.
(C) It is a utility program that facilitates the backing up of the disk
(D) It is a utility program used for creating and editing text file (E) None of these.

17. What does OCR stand for?
(A) Optical Character Reader (B) Optical Character Recognition
(C) Operational Character Reader (D) Only Character Reader (E) None of these.

18. Match the following

1. Scanner	A. Input Device
2. OCR	B. Output Device
3. Light pen	
4. Plotter	
5. Printer	

(A) 1A, 2B, 3A, 4B, 5A (B) 1A, 2A, 3A, 4B, 5B
(C) 1A, 2A, 3B, 4B, 5B (D) 1A, 2B, 3A, 4B, 5B (E) None of these.

19. The smallest unit of memory is
(A) 16 bytes (B) 8 bits (C) 1 kilo byte (D) 1 GB (E) None of these.

20. The term "operating system" refers to
(A) A set of programs which controls computer working (B) The way a computer operator works
(C) Conversion of high level language into machine code
(D) The way a floppy disk drive operates (E) None of these.

ANSWER KEY

1. (D)	2. (B)	3. (B)	4. (A)	5. (A)	6. (A)	7. (D)	8. (B)	9. (B)	10. (B)
11. (C)	12. (D)	13. (C)	14. (A)	15. (B)	16. (B)	17. (B)	18. (B)	19. (B)	20. (A)