



Unified International Cyber Olympiad

UNIFIED INTERNATIONAL CYBER OLYMPIAD

CLASS - 07

Question Paper Code : 3P124

KEY

1. D	2. C	3. B	4. B	5. A	6. A	7. C	8. A	9. A	10. C
11. A	12. C	13. C	14. C	15. D	16. C	17. C	18. D	19. B	20. C
21. B	22. D	23. D	24. D	25. A	26. C	27. B	28. A	29. A	30. A
31. C	32. C	33. B	34. B	35. B	36. B	37. A	38. A	39. B	40. B
41. A	42. B	43. C	44. B	45. B	46. B	47. C	48. A	49. B	50. B

SOLUTIONS

MENTAL ABILITY

$$\begin{aligned}
 \text{01. (D) LHS} &= 1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{\left(\frac{3}{2}\right)}}} \\
 &= 1 + \frac{1}{1 + \frac{1}{1 + \frac{2}{3}}} = 1 + \frac{1}{1 + \frac{1}{1 + \frac{5}{3}}} \\
 &= 1 + \frac{1}{1 + \frac{3}{5}} = 1 + \frac{1}{\left(\frac{8}{5}\right)} = 1 + \frac{5}{8}
 \end{aligned}$$

$$= \frac{8+5}{8} = \frac{13}{8}$$

$$\begin{aligned}
 \text{02. (C) } x + 23^\circ + y &= 27^\circ + 99^\circ \\
 x + y &= 126^\circ - 23^\circ \\
 &= 103^\circ
 \end{aligned}$$

$$\begin{aligned}
 \text{03. (B) } 1 - 2 - 3 + 4 &= 5 - 5 = 0 \\
 5 - 6 - 7 + 8 &= 13 - 13 = 0 \\
 2025 - 2026 - 2027 + 2028 &= -1 + 1 = 0 \\
 \therefore \text{Total sum} &= 0 + 0 + 0 + \dots + 0 = 0
 \end{aligned}$$

04. (B) Cost of one litre milk

$$= \frac{\left(\frac{\text{₹} 5157}{20} \right)}{\frac{27}{5}} = \frac{\text{₹} 5157}{20} \times \frac{5}{27}$$

∴ Cost of $3\frac{3}{4}$ litres

$$= \frac{\text{₹} 5157}{4} \times \frac{1}{27} \times \frac{15}{4} = \frac{\text{₹} 2865}{16} = \text{₹} 179 \frac{1}{16}$$

05. (A) LHS =

$$\frac{1}{3 \times 5} + \frac{1}{5 \times 7} + \frac{1}{7 \times 9} + \frac{1}{9 \times 11} + \frac{1}{11 \times 13} + \frac{1}{13 \times 15}$$

$$= \frac{2}{2} \left[\frac{1}{3 \times 5} + \frac{1}{5 \times 7} + \frac{1}{7 \times 9} + \frac{1}{9 \times 11} + \frac{1}{11 \times 13} + \frac{1}{13 \times 15} \right]$$

$$= \frac{1}{2} \left[\frac{2}{3 \times 5} + \frac{2}{5 \times 7} + \frac{2}{7 \times 9} + \frac{2}{9 \times 11} + \frac{2}{11 \times 13} + \frac{2}{13 \times 15} \right]$$

$$= \frac{1}{2} \left[\frac{1}{3} - \frac{1}{5} + \frac{1}{5} - \frac{1}{7} + \frac{1}{7} - \frac{1}{9} + \frac{1}{9} - \frac{1}{11} + \frac{1}{11} - \frac{1}{13} + \frac{1}{13} - \frac{1}{15} \right]$$

$$= \frac{1}{2} \left[\frac{1}{3} - \frac{1}{15} \right]$$

$$= \frac{1}{2} \left[\frac{5-1}{15} \right]$$

$$= \frac{1}{2} \times \frac{4}{15} = \frac{2}{15}$$

06. (A) A scalene triangle has no line of symmetry.

07. (C) $\text{LHS} = \frac{a^2}{2} - \frac{b^3}{3} + \frac{c^3}{4} + \frac{2a^2}{3} - \frac{3b^3}{4} + \frac{4c^3}{5}$

$$+ a^2 - b^3 - c^3$$

$$= \left(\frac{a^2}{2} + \frac{2a^2}{3} + a^2 \right) + \left(-\frac{b^3}{3} - \frac{3b^3}{4} - b^3 \right)$$

$$+ \left(\frac{c^3}{4} + \frac{4c^3}{5} - c^3 \right)$$

$$= \left(\frac{3a^2 + 4a^2 + 6a^2}{6} \right) + \left(\frac{-4b^3 - 9b^3 - 12b^3}{12} \right) + \left(\frac{5c^3 + 16c^3 - 20c^3}{20} \right)$$

$$= \frac{13a^2}{6} - \frac{25b^3}{12} + \frac{c^3}{20}$$

08. (A) $\text{LHS} = \frac{15239.9025 - 549.9025}{146.9}$

$$= \frac{14690}{146.9} \times \frac{10}{10}$$

$$= \frac{14690 \times 10}{1469}$$

$$= 100$$

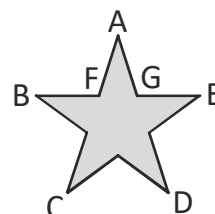
09. (A) $25 \times 10 + 12 \times 1 + 5 \times \frac{1}{10} + \frac{10}{100} = 250 +$

$$12 + 0.5 + 0.1$$

$$= 262 + 0.6$$

$$= 262.6$$

10. (C) Construction : Join AC, BD, CE, DA



Proof : $\angle AFG = \angle C + \angle E$

$$\angle AGF = \angle B + \angle D$$

$$\text{In } \triangle AFG, \angle A + \angle AFG + \angle AGF = 180^\circ$$

$$\Rightarrow \angle A + \angle C + \angle E + \angle B + \angle D = 180^\circ$$

$$\Rightarrow \angle A + \angle B + \angle C + \angle D + \angle E = 180^\circ$$

11. (A) $3 \text{ cm} + 4 \text{ cm} > 5 \text{ cm}, 4 \text{ cm} + 5 \text{ cm} > 3 \text{ cm},$
 $3 \text{ cm} + 5 \text{ cm} > 4 \text{ cm}$

Hence option (A) sides form a triangle

12. (C) $-8x - 5[2x - 3\{-4x + 9\}]$

$$= -8x - 5[2x + 12x - 27]$$

$$= -8x - 5[14x - 27]$$

$$= -8x - 70x + 135$$

$$= -78x + 135$$

13. (C) $-2027 \times 10 = -20,270$

14. (C) Given $P \times 3 = \boxed{} \boxed{1} \Rightarrow P$ must be 7

$\therefore \frac{32951}{397} = Q3$

$\therefore Q3 = 83$

$\therefore P = 7$ and $Q = 8$

$P + Q = 15$

15. (D) Product of 3 digit number and 4 digit has either 6 digits (or) 7 digits

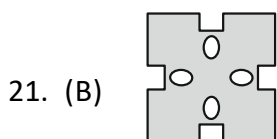
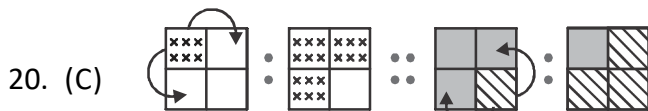
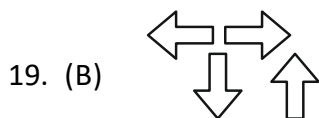
Eg : $100 \times 1000 = 100000$ has 6 digits

$999 \times 9999 = 99,89,001$ has 7 digits

REASONING

16. (C) The upper letter depends on the arrangement of the shapes, and the lower letter depends on the position of the shaded shape. Since the squares are arranged vertically, the upper letter is H. As the middle square is shaded, the lower letter is U. Therefore, the correct code is HU.

17. (C) The differences between consecutive terms are 1, 4, 7, 10, and 13, which increase by 3 each time. Therefore, the next difference is 16, so the missing number is $39 + 16 = 55$.



22. (D) The figures contain one hollow and one filled shape of the same type, same size, and same orientation, along with one different hollow shape. Option D follows this pattern, whereas B has different-sized matching shapes and C has matching shapes with different orientations.

Hence, (D) is the correct answer.

23. (D) Figures A, B, and C contain only the digit 6, whereas D contains one 9.

Therefore, (D) is the odd one out.

24. (D) Rohit starts facing east. After the first left turn, he faces north. After the second left turn, he faces west. Therefore, he is facing west.

25. (A) The numbers divisible by 5 are 5, 5, 5, 5, 5, and 10. Only the fifth 5 is immediately followed by 6, which is divisible by 3. Therefore, only one number satisfies the condition.

26. (C) Reverse each half of the alphabet separately. The 12th letter from the left is B. Moving 7 letters to the right gives U. Therefore, the correct answer is (C) U.

27. (B) $49 - 10 + 21 = 60$

28. (A) Rearrange the letters in each option to form a meaningful word. Only DILEMD rearranges to MIDDLE, which means at an equal distance from both ends.

29. (A) e (curse and each are valid words.)

30. (A) 21

COMPUTERS

31. (C) Compilation converts a program written in a high-level language into machine code. Therefore, File A and File B are directly related through compilation.

32. (C) ENIAC was an electronic vacuum-tube computer, not a mechanical calculator.

33. (B) In the reference B\$5:

- B is a relative column, so it changes when copied left or right.
- \$5 is an absolute row, so row 5 remains fixed regardless of where the formula is copied.

34. (B) Only Manage Sources can add, edit, delete, and reuse citation sources.
35. (B) The LAN continues to work through the switches, so computers can still share files. However, the Internet connection is unavailable because the router is disconnected from the Internet.
36. (B) A remainder of 0 means the number is exactly divisible by 5. It could be 5, 10, 15, 20, etc.
37. (A) The LEFT\$ function returns the specified number of characters from the beginning of a string. Therefore,
LEFT\$("OLYMPIAD",4) displays OLYM.
38. (A) Only Statement 1
- Statement 1 is True. The Slide Master controls the overall design, fonts, placeholders, backgrounds, and formatting for all slides using that master or layout.
 - Statement 2 is False. Changes made in the Slide Master affect all associated slides, not just the currently selected slide.
39. (B) A switch connects computers within a Local Area Network (LAN), allowing them to share files and communicate without requiring an Internet connection. The other devices are mainly used to provide or manage Internet access.
40. (B) Movie Clip symbols have their own independent timeline.
41. (A) P-2, Q-3, R-1, S-4
- RAM stores active data, ROM stores firmware, SSD provides faster booting, and Cache stores frequently used instructions.
42. (B) Multitasking allows the operating system to run multiple applications simultaneously and lets the user switch between them without closing any application.
43. (C) MOIADN unscrambles to DOMAIN. A domain name is the unique name used to identify a website on the Internet (for example, openai.com).
44. (B) F6 inserts a new keyframe containing a copy of the previous keyframe's contents. The copied drawing can then be modified independently.
45. (B) Herman Hollerith developed the Punch-card Tabulating Machine for processing census data.

ENGLISH

- 46 (B)
- 47 (C)
- 48 (A)
- 49 (B)
- 50 (B)

===== The End =====