



UNIFIED CYBER OLYMPIAD (UPDATED)

CLASS - 8
Question Paper Code : 3P104

KEY

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

SOLUTIONS

MENTAL ABILITY

01. (B) Let the number of persons be 'x'

Amount received by each person = ₹ $1\frac{1}{4}$

$$x = ₹ \frac{5}{4} x$$

∴ Total amount = $x \times \frac{5}{4} x = ₹ \frac{5}{4} x^2$

Given ₹ $\frac{5}{4} x^2 = ₹ 28,880$

$$x^2 = \frac{28,880 \times 4}{5} = 23104$$

$$x = \sqrt{23104}$$

$$\begin{array}{r|l} 1 & \overline{2\ 31\ 04} & 152 \\ & \underline{1} & \\ 25 & \overline{1\ 31} & \\ & \underline{1\ 25} & \\ 302 & \overline{6\ 04} & \\ & \underline{6\ 04} & \\ & 0 & \end{array}$$

No. of persons (x) = 152

02. (D) Let $x = n^2, n \geq 0$

then $(n + 1)^2 = n^2 + 2n + 1$

$$= x + 2\sqrt{x} + 1$$

03. (C)
$$\frac{(x^5 + x^4 + x^3 + x^2)}{x^2} = \frac{x^2(x^3 + x^2 + x + 1)}{x^2}$$

$$04. (D) \quad (1^{100} + 2^3 + 3^3 + 4^3)^{\frac{1}{2}} = (1 + 8 + 27 + 64)^{\frac{1}{2}}$$

$$= 100^{\frac{1}{2}}$$

$$= (10^2)^{\frac{1}{2}}$$

$$= 10^{2 \times \frac{1}{2}}$$

$$= 10$$

05. (A) SP = SP of 40 pens
 loss = SP of 10 pens
 CP = SP + loss = SP of 50 pens

$$\text{loss \%} = \frac{\text{loss}}{\text{CP}} \times 100 = \frac{\text{SP of 10 pens}}{\text{SP of 50 pens}} \times 100$$

$$\text{Loss \%} = 20$$

06. (A) Given rate of interest per annum = 5%
 \therefore Rate of interest per half year

$$= \frac{5\%}{2} = 2.5\% = n$$

$$n = \frac{12 \text{ months}}{6 \text{ months}} = 2$$

$$\text{Compound amount} = p \left(1 + \frac{r}{100} \right)^n$$

$$₹ 2,00,000 \left(1 + \frac{2.5}{100} \right)^2$$

$$= ₹ 2,00,000 \times (1 + 0.025)^2$$

$$= ₹ 2,00,000 \times (1.025)^2$$

$$= ₹ 2,00,000 \times 1.050625$$

$$= ₹ 2,10,125$$

$$\therefore \text{CI} = A - P = ₹ 2,10,125 - ₹ 2,00,000$$

$$= ₹ 10,125$$

$$07. (A) \quad \text{CI} - \text{SI} = p \left(1 + \frac{r}{100} \right)^n - p - \frac{\text{PTR}}{100}$$

$$= ₹ 1,25,000 \left(1 + \frac{12}{100} \right)^3 - ₹ 1,25,000 -$$

$$\frac{₹ 1,25,000 \times 3 \times 12}{100}$$

$$= ₹ 1,25,000 \times \frac{28}{251} \times \frac{28}{251} \times \frac{28}{251}$$

$$- ₹ 1,25,000 - ₹ 45,000$$

$$= ₹ 1,75,616 - ₹ 1,70,000$$

$$= ₹ 5,616$$

08. (D) Given $a^3 = 216 \text{ cm}^3$

$$a^3 = (6 \text{ cm})^3$$

$$a = 6 \text{ cm}$$

$$\text{TSA of a cube} = 6a^2$$

$$= 6 \times (6 \text{ cm})^2$$

$$= 6 \times 36 \text{ cm}^2$$

$$= 216 \text{ cm}^2$$

09. (B) $x^2 + 32x - 105 = x^2 + 35x - 3x - 105$

$$= x(x + 35) - 3(x + 35)$$

$$x^2 + 32x - 105 = (x + 35)(x - 3)$$

$\therefore (x + 35)$ is a factor of $(x^2 + 32x - 105)$

10. (A) Given $2\pi rh = 660 \text{ cm}^2$

$$2 \times \frac{22}{7} \times 10 \text{ cm} \times h = 660 \text{ cm}^2$$

$$[\therefore r = \frac{d}{2} = \frac{20 \text{ cm}}{2} = 10 \text{ cm}]$$

$$h = \frac{660}{44} \text{ cm} = \frac{15}{2} \text{ cm}$$

$$\text{Volume of the cylinder} = \pi r^2 h$$

$$= \frac{22}{7} \times 10 \text{ cm} \times 10 \times \frac{15}{2} \text{ cm}$$

$$= 3300 \text{ cm}^3$$

11. (D) Given $s^2 = 7396 \text{ mt}^2$

$$s = \sqrt{7396 \text{ mt}^2}$$

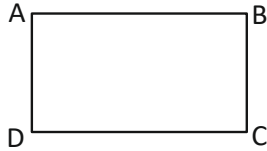
$$\begin{array}{r|l} 8 & \overline{73 \ 96} & 86 \\ & \underline{64} & \\ 166 & 9 \ 96 & \\ & \underline{9 \ 96} & \\ & 0 & \end{array}$$

$$s = 86 \text{ mts}$$

$$\text{Perimeter of the square field} = 4s$$

$$= 4 \times 86 \text{ m} = 344 \text{ mts}$$

12. (C) In a parallelogram ABCD, $\angle C = 90^\circ \Rightarrow \angle A = 90^\circ$
 But $\angle A + \angle B = 180^\circ$
 $90^\circ + \angle B = 180^\circ$
 $\angle B = 180^\circ - 90^\circ$
 $\angle B = 90^\circ \Rightarrow D = 90^\circ$



\therefore ABCD can be a square (or) rectangle.
 Given $AD \neq AB \Rightarrow$ ABCD is a rectangle.

13. (B) Let the sides of the squares be x & $x + 3$
 Given $x^2 + (x + 3)^2 = 369$
 $x^2 + x^2 + 6x + 9 = 369$
 $2x^2 + 6x = 369 - 9$
 $2x^2 + 6x = 360$
 $2(x^2 + 3x) = 360$

$$x^2 + 3x = \frac{360}{2} = 180$$

$$x^2 + 3x - 180 = 0$$

$$x^2 + 15x - 12x - 180 = 0$$

$$x(x + 15) - 12(x + 15) = 0$$

$$(x + 15)(x - 12) = 0$$

$$x + 15 = 0 \text{ (or) } x - 12 = 0$$

$x = -15$ is rejected because side can't be negative.

$$\therefore x = 12 \Rightarrow x + 3 = 15 \text{ m} \Rightarrow \text{perimeter} = 4(x + 3) = 4 \times 15 \text{ m} = 60 \text{ m}$$

14. (A) Let the no. of rotten apples be ' x '
 \therefore Probabilities of selecting a rotten apple = $\frac{x}{900}$

$$\text{Given } \frac{x}{900} = 0.18$$

$$x = 0.18 \times 900$$

\therefore No. of rotten apples = $x = 162$



15. (B) $27^{64} = (3^3)^{64} = 3^{3 \times 64} = 3^{192}$
 $81^{49} = (3^4)^{49} = 3^{4 \times 49} = 3^{196}$
 $9^{97} = (3^2)^{97} = 3^{2 \times 97} = 3^{194}$
 $\therefore 3^{192} < 3^{194} < 3^{195} < 3^{196}$
 $\therefore 81^{49} < 9^{97} < 3^{195} < 81^{49}$

REASONING

16. (C) The shaded figure rotates 180° and the other figure rotates 45° anti-clockwise direction.

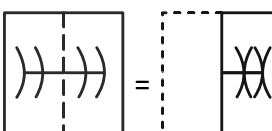
17. (A) 

18. (B) Code for  or  is H.

Code for  is P. Code for  is I.

Hence, the missing code for the given figure is IH.

19. (B) 

20. (D) 

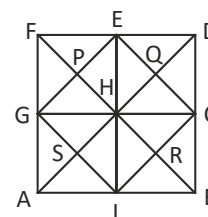
21. (B) Here, we observe that the figure 1,6,7 have only elements, the figures 2,5 and 9 have two elements while figures 3,4 and 8 consist of three elements.

Hence, (B) is the correct alternative.

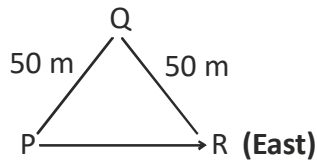
22. (C) Except in option (C) in remaining options the number of inside figures is equal to number of sides of polygon.



23. (A) There are 10 squares in the given figure. ABDF, HCDE, HGFE, AGHI, HICB, GEIC, EPHQ, QHRC, HRIS, HSGP



24. (A)



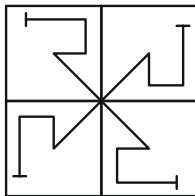
25. (D) + & # are opposite when the given cube is folded.

26. (C) (u-the two new words are pond and our)

27. (A) In the first figure, $(15 - 5) \times (2 + 6) = 80$
and second figure, $(9 - 4) \times (7 + 6) = 65$
 \therefore In third figure, we have $(13 - 11) \times (16 + 8) = 48$

28. (B) The hidden word is mend

29. (B) A B A A B A A B A



30. (A)

COMPUTERS

31. (C) The Library panel in Adobe Flash provides access to pre-made graphical and interactive elements such as symbols, shapes, buttons, and animations. It allows users to organize and manage reusable assets within their Flash projects.

32. (B) This program uses a FOR...NEXT loop to print "Hello" 5 times, as the loop iterates from 1 to 5.

33. (B) While some antivirus software may include firewall protection as an additional feature, it is not a core function of antivirus software. Firewalls are typically separate security tools that control incoming and outgoing network traffic.

34. (D) On mobile devices like smartphones and tablets, the operating system is responsible for managing apps and system resources, controlling hardware components, providing a user interface, and facilitating communication between the user and the device.

35. (C) The <body> tag is used to define the visible content of an HTML document. It contains all the content that users see and interact with when viewing the webpage.

36. (B) When opening an existing database in Microsoft Access, the "Open Other Files" option allows you to browse for the database file on your computer or network. This option enables you to select the specific database file you want to open.

37. (B) 5G has the potential to offer download speeds up to 10 gigabits per second, making it the best option for large-scale data applications such as virtual reality and cloud computing.

38. (A) FAT32 is a commonly used file system for formatting pendrives due to its compatibility with various operating systems, including Windows, macOS, and Linux. It supports file sizes up to 4 GB and is suitable for most USB flash drives.

39. (C) In Microsoft Excel 2016, a range is typically represented as a rectangular block of cells, defined by specifying the top-left and bottom-right cells of the block. This rectangular block can contain one or more rows and columns of cells.

40. (D) Ethical behavior in computing involves respecting intellectual property rights, such as using software legally by purchasing licenses, and respecting individuals' privacy by safeguarding their personal information.

41. (C) A web browser is used to support HTML web pages, read them and render them.

42. (B) The Rehearse Timings feature in PowerPoint allows presenters to practice and record the timing of slide transitions and animations during a rehearsal.

43. (D) In a database, a table consists of records (rows) and fields (columns) where data is stored and organized. A slide is a component of presentation software, not a database.
44. (A) A Personal Area Network (PAN) is a type of computer network used for communication between devices owned and operated by a single person, typically over short distances. PANs can include devices such as smartphones, tablets, laptops, and wearable devices.
45. (A) In Adobe Flash, a keyframe refers to a single static image or frame in an animation sequence. Keyframes define the beginning or end of an animation sequence or mark significant changes in the animation. Users can add content or animation to keyframes to create dynamic motion sequences.

46. (D)
47. (B)
48. (A)
49. (B)
50. (C)

=====*The End*=====