



UNIFIED COUNCIL

An ISO 9001:2015 Certified Organisation



UNIFIED CYBER OLYMPIAD (UPDATED)

CLASS - 9

Question Paper Code : UC359

KEY

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

SOLUTIONS

MENTAL ABILITY

1. (D) Some times a whole number and some times an irrational number.

2. (B) $0.\overline{63} + 0.\overline{37} + 0.\overline{80} = \frac{63}{99} + \frac{37}{99} + \frac{80}{99} = \frac{180}{99}$
 $= 1.818181.....$

3. (B) Given $P(x) = x^{2020} + y^{2020}$ is divided by $(x + y)$ then the remainder is $P(-y)$
 $\therefore P(-y) = (-y)^{2020} + y^{2020} = y^{2020} + y^{2020} = 2y^{2020}$

4. (A) $\frac{\sqrt{1008} - \sqrt{1792}}{\sqrt{28}} = \frac{\sqrt{144 \times 7} - \sqrt{256 \times 7}}{\sqrt{4 \times 7}}$

$$= \frac{12\sqrt{7} - 16\sqrt{7}}{2\sqrt{7}}$$

$$= \frac{-4\sqrt{7}}{2\sqrt{7}}$$

$$= -2$$

5. (D) Given $4a^3 + 984 = 13b^7$
 If $a = 1$ & $b = 9$ then $413 + 984 = 1397$ is divisible by 11
 $\therefore a + b = 1 + 9 = 10$

6. (B) Let son's present age be 'x' years
 two years ago son's age = $(x - 2)$ years

two years ago father's age = $5(x - 2)$ years

\therefore father present age = $5x - 10 + 2 = (5x - 8)$ years.

$$\text{Given } 5x - 8 + 2 = 3(x + 2) + 8$$

$$5x - 6 = 3x + 6 + 8$$

$$2x = 20$$

$$x = 10$$

7. **(D)** It is in inverse variation

$$\therefore x_1 y_1 = x_2 y_2$$

$$36 \times 12 = 27 \times y^2$$

$$y_2 = \frac{36 \times 12}{27} = 16$$

8. **(C)** Given $x + \frac{1}{x} = -2$

$$\frac{x^2 + 1}{x} = -2$$

$$x^2 + 1 = -2x$$

$$x^2 + 2x + 1 = 0$$

$$(x + 1)^2 = 0$$

$$x = -1$$

$$\therefore x^{2019} + \frac{1}{x^{2019}} = (-1)^{2019} + \frac{1}{(-1)^{2019}} = -1 - 1 = -2$$

9. **(D)** By observation $x = 4$ is the solution of

$$3\sqrt{x} + 4\sqrt{x} + 12\sqrt{x} = 13\sqrt{x}$$

$$\text{i.e. } 3\sqrt{4} + 4\sqrt{4} + 12\sqrt{4} = 13\sqrt{4}$$

$$3^2 + 4^2 + 12^2 = 13^2$$

10. **(C)** Given $\pi \cdot 4.5 \times 4.5 \times 32 \text{ cm}^2 = \frac{1}{3} \pi r^2 \times 24 \text{ cm}$

$$\frac{9}{2} \times \frac{9}{2} \times 4 \text{ cm}^2 = r^2$$

$$\therefore r = 9 \text{ cm}$$

11. **(B,D)** Verity from options option 'B' divides

$$\left(\frac{8x^2}{9} - \frac{5xy}{9} - \frac{y^2}{2} \right)$$

$$\frac{2x}{3} - \frac{3y}{4} \left(\frac{8x^2}{9} - \frac{5xy}{9} - \frac{y^2}{2} \right) \left(\frac{4x}{3} + \frac{2y}{3} \right)$$

$$\frac{8x^2}{9} - xy$$

$$\frac{4xy}{9} - \frac{y^2}{2}$$

$$\frac{4xy}{9} - \frac{y^2}{2}$$

$$\frac{(-)}{(0)} \quad \frac{(+)}{(0)}$$

12. **(D)** option 'D' is neither terminates nor repeater

$\therefore 3.567567856789....$ is an irrational number i.e not a rational number

13. **(B)** $(a^x)^3 + (b^y)^3 = (a^x + b^y) [(a^x)^2 - a^x \times b^y + (b^y)^2]$
 $(a^x + b^y)(a^{2x} - a^x \times b^y + b^{2y})$

14. **(B)** Given $\pi r_1^2 h_1 = \pi r_2^2 h_2$

$$\therefore \frac{h_1}{h_2} = \frac{r_2^2}{r_1^2} = \left(\frac{r_2}{r_1} \right)^2$$

15. **(B)** $46 + 64 = 110$ and $6 - 4 = 2$ (OR)

Let the original number be $10x + y$

Reversed digit number = $10y + x$

Given $10x + y$ $10y + x = 110$

$$11x + 11y = 110$$

$$x + y = 10 \text{ \& given } x - y = 2$$

$$\therefore x = 6 \text{ \& } y = 4$$

$\therefore 64$ \& 46 are the numbers which satisfies the given conditions.

REASONING

16. **(D)** $9 \times 8 = 72$

$$10 \times 9 = 90$$

$$8 \times 7 = 56$$

$$11 \times 10 = 110$$



17. **(B)**

18. **(D)** A A C B B B D C C C E D D

19. **(D)** $9^2 + 2^2 + 5^2 \Rightarrow 81 + 4 + 25 \Rightarrow 110$

$$6^2 + 3^2 + 4^2 \Rightarrow 36 + 9 + 16 \Rightarrow 61$$

$$7^2 + 4^2 + 5^2 \Rightarrow 49 + 16 + 25 \Rightarrow 90$$

20. (D) TROUSERS

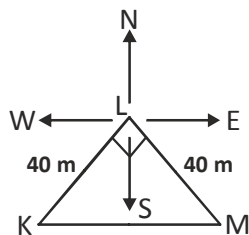
21. (B) MEET is coded as 6779
MIND is coded as 6132
FIND is coded as 4182

∴ 6187 is coded as MINE



5th image is half right part of 1st image
6th image is half right part of 2nd image
require 7th image is half right part of 3rd image.

23. (B)



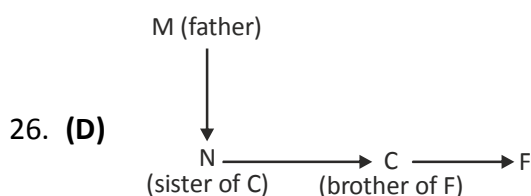
$$\sqrt{1600 + 1600} \Rightarrow \sqrt{3200}$$

$$\sqrt{4 \times 8 \times 100} \Rightarrow 4 \times 10\sqrt{2} = 40\sqrt{2} \text{ km}$$

24. (A) The opposite number of facing 3 is 5.

25. (B) ACCGHILLOOPTY

'O' is fifth from right.



'C' is the son of M.

27. (D) The same letter that fits into both sets of brackets is 't'.

28. (D) Jagadish is younger than Srikanth.

29. (C) CHIVES

30. (C) 8 cube is $512, 512 / 2 = 256$. Similarly 10 cube is $1000, 1000 / 2 = 500$

COMPUTERS

31. (A) Fetch instruction from memory, decode it, execute the decoded information, give output.

32. (B) Pen drive is easiest and best choice for storage of the data.

33. (B) Word Processor is used to create and edit text documents.

34. (C) Operating system is the first software to be loaded in a computer.

35. (A) a-iv, b-i, c-iii, d-ii

36. (A) GNU/Linux is not a proprietary software.

37. (A) .odt is the file extension of open office text document files.

38. (B) Form

39. (B) When using a selection tool, if I want to SUBTRACT to the current selection, I should hold the ctrl key while selecting.

40. (B) when the location of image file and html file are different.

41. (B,D) The 'Do Until...Loop' statement executes until its loop-continuation condition becomes false in Visual basic. Do while is used in Java.

42. (C) Preservation is not considered to be one of the three phases of a e-commerce.

43. (D) NIC stands for Network Interface Card.

44. (C) Fibre optic cable transmits data in the form of light beams.

45. (B) eBay, Amazon.com belongs to B2Cs

ENGLISH

46. (B) Wobbly

47. (C) Haggard

48. (B) Slacken

49. (D) She wished that she would not be late.

50. (C) I was asked what my post was.