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UNIFIED COUNCIL OLYMPIADS

UIC
Unified International Cyber Olympiad

UNIFIED INTERNATIONAL CYBER OLYMPIAD

CLASS - 8
Question Paper Code : 3B117

KEY

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

SOLUTIONS

MENTAL ABILITY

01. (C) $5\sqrt{3} = \sqrt{5\times5\times3} = \sqrt{75}$

$3\sqrt{7} = \sqrt{3\times3\times7} = \sqrt{63}$

$4\sqrt{5} = \sqrt{4\times4\times5} = \sqrt{80}$

$2\sqrt{17} = \sqrt{2\times2\times17} = \sqrt{68}$

$\sqrt{80} > \sqrt{75} > \sqrt{68} > \sqrt{63}$

$\therefore$ $\sqrt{80}$ i.e., $4\sqrt{5}$ is the greatest

02. (B) $\therefore$ Puneet share = $\frac{5}{12} \times 660 = 275$

03. (C) Let CP be ₹ x

MP = 150% CP = ₹ $\frac{3x}{2}$

SP = 80% of MP = $\frac{80}{100} \times ₹\frac{3x}{2} = ₹\frac{6x}{5}$

Profit = SP – CP = $\frac{6x}{5} - x = \left(\frac{x}{5}\right)$

Profit percentage

$= \frac{P}{CP} \times 100 = \frac{\left(\frac{x}{5}\right)}{x} \times 100 = 20\%$

04. (B) $\sqrt{15}x^2+2x-\sqrt{15}=\sqrt{15}x^2+5x-3x-\sqrt{15}$

$=\sqrt{5}x\left(\sqrt{3}x+\sqrt{5}\right)-\sqrt{3}\left(\sqrt{3}x+\sqrt{5}\right)$

$=\left(\sqrt{3}x+\sqrt{5}\right)\left(\sqrt{5}x-\sqrt{3}\right)$

05. (C) $\dfrac{x+0.75}{\left(\frac{1}{8}\right)}-\dfrac{x-0.25}{\left(\frac{1}{4}\right)}=15$

$8x + 6 - 4x + 1 = 15$

$4x = 8$

$x = 2$

06. (B) Given lb = ($a^3 + 3a^2 + 3a + 1$) cm^2

($a^2 + 2a + 1$)cm × b = ($a^3 + 3a^2 + 3a + 1$) cm^2

$\therefore b=\dfrac{(a^3+3a^2+3a+1)cm^2}{(a^2+2a+1)cm}=(a+1)cm$

$a^3+2a+1 \;\big|\; a^3+3a^2+3a+1 \;\big|\; a+1$

a^3+2a^2+a

a^2+2a+1

a^2+2a+1

0

07. (C) LHS = $\dfrac{1}{0.3}+25+\sqrt{\dfrac{1}{4}}$

$=\dfrac{10}{3}+25+\dfrac{1}{2}$

$= 3 + \dfrac{1}{3} + 25 + \dfrac{1}{2}$

$= 28 + \dfrac{1}{3} + \dfrac{1}{2}$

$= 28 + \dfrac{5}{6}$

$= 28\ \dfrac{5}{6}$

08. (C) Given ₹673 = $\dfrac{P\times 4\times \frac{25}{3}}{100}$

P = ₹ 673 × 3 = ₹ 2019

09. (D) Let $\dfrac{1}{6}+\dfrac{1}{7}+\dfrac{1}{8}$ = a $\Rightarrow$ (1+a) (a+$\dfrac{1}{9}$)) −

(1+a+$\dfrac{1}{9}$) (a)

LHS = a + $\dfrac{1}{9}$ + a^2 + $\dfrac{a}{9}$ − (a + a^2 + $\dfrac{a}{9}$)

= a + $\dfrac{1}{9}$ + a^2 + $\dfrac{a}{9}$ − a − a^2 − $\dfrac{a}{9}$

= $\dfrac{1}{9}$

10. (C) Given x + y + z = 0

y + z = − x

y^2 + z^2 + 2yz = x^2

y^2 + z^2 + yz + yz = x^2

y^2 + z^2 + yz = x^2 − yz

$\Rightarrow \dfrac{y^2+z^2+yz}{x^2-2yz}=1$

Adding '1' on both sides

$\dfrac{y^2+z^2+yz}{x^2-yz}+1=1+1$

$\dfrac{y^2+z^2+yz+x^2-yz}{x^2-yz}=2$

$\dfrac{x^2+y^2+z^2}{x^2-yz}=2$

11. (C)

$\text{LHS}=\left(\dfrac{8x}{5}+\dfrac{11y}{7}+\dfrac{9}{4}xy\right)+\left(\dfrac{-3x}{2}-\dfrac{9xy}{5}-\dfrac{5y}{3}\right)$

$=\dfrac{8x}{5}+\dfrac{11y}{7}+\dfrac{9xy}{4}-\dfrac{3x}{2}-\dfrac{9xy}{5}-\dfrac{5y}{3}$

$=\left(\dfrac{8x}{5}-\dfrac{3x}{2}\right)+\left(\dfrac{11y}{7}-\dfrac{5y}{3}\right)+\left(\dfrac{9xy}{4}-\dfrac{9xy}{5}\right)$

$=\left(\dfrac{16x-15x}{10}\right)+\left(\dfrac{33y-35y}{21}\right)+\left(\dfrac{45xy-36xy}{20}\right)$

$=\left(\dfrac{x}{10}-\dfrac{2y}{21}+\dfrac{9xy}{20}\right)$

12. (D) $-\frac{2}{3}y^2 + \frac{3}{2}xy + 2x^2 - 3y^2 + 2xy + \frac{7}{2}x^2 = \frac{11x^2}{2} + \frac{7xy}{2} - \frac{11y^2}{3}$

13. (B) Given $2[p + 3 + 2p - 5] = 26$ cm

$3p - 2 = 13$

$3p = 15$

$p = 5$

$l = p + 3 = 8$ $\quad$ $b = 2p - 5 = 5$

Arera = $l \times b = 40$ cm^2

14. (C) $\frac{x-2}{x-1} - \frac{3(1-x)}{(x-1)^2} = \left(\frac{x-2}{x-1}\right) - \frac{3(-1)\cancel{(x-1)}}{(x-1)^{\cancel{2}}}$

$= \frac{x-2}{x-1} + \frac{3}{x-1}$

$= \frac{x-2+3}{x-1}$

$= \left(\frac{x+1}{x-1}\right)$

15. (C) Given $3^{x+7} = 13^{x+7}$

$\therefore\ x + 7 = 0 \quad x = -7$

REASONING

16. (D) In terms of age

Surendra > Hari > Giri

Gowri > Guru > Giri

Mahendra > Gowri > Guru > Giri

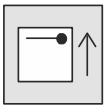
'Giri' is the youngest.

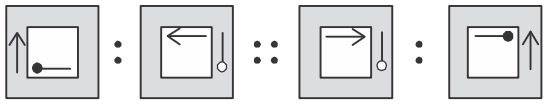
17. (D) When this figure is folded to form a cube then the face bearing six dots will lie opposite the face bearing three dots.

18. (D) Unscrambling option (D) gives CUPBOARD

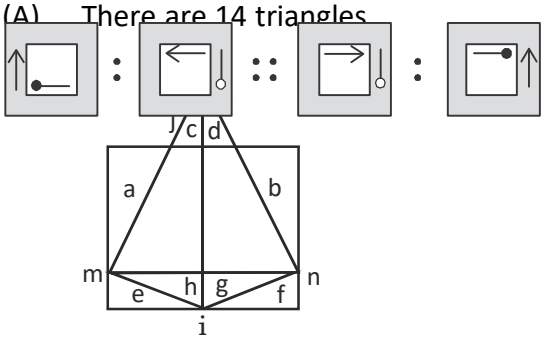
19. (A) Each number in the segment at the bottom is the sum of the four numbers in the sections either side.

Thus 8 + 3 + 4 + 3 = 18.

20. (D) 



21. (A) There are 14 triangles



22. (C) This is simple alternating addition and subtraction series.

The pattern followed is:

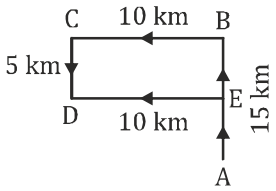
6 + 3 = 9 $\quad$ 9 – 2 = 7

7 + 3 = 10 $\quad$ 10 – 2 = 8

8 + 3 = 11

11 – 2 = 9

Clearly next term is 9

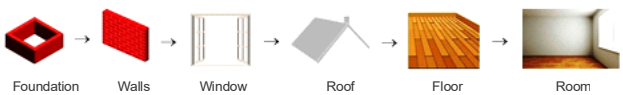
23. (D) 

The movements of Lokesh are as shown in Fig.

(A to B, B to C, C to D and D to E).

Clearly, his final position is E which is to the North of his house at A.

24. (C) Correct sequence will be -



Hence, the option B is correct.

25. (C) 

26. (C) RQPO $\Rightarrow$ OPQR

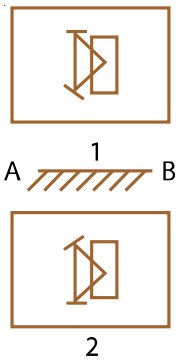
VUTS $\Rightarrow$ STUV

HNOP ⇒ HNOP

HGFE ⇒ EFGH

HNOP is not in sequence. So, it is add one out.

27. (B) Please refer the image given below. As you can see image 2 can be obtained by mirroring image 1 along the mirror AB.



28. (C) 5,8,9 are objects having both base as well as upper lid.

2,3,6 are objects having base but not upper lid.

1,4,7 tare objects which have neither a base nor an upper lid attached to them.

29. (B) In this coding, all the vowels of a word are moved to the front maintaining their original sequence. In this way, AEEATRNSCDNTL could be the code for TRANSCEDENTAL.

30. (B)

U	T
T	U

I	F	U	L
I	J	K	L

Clearly there are 2 such pairs.

Hence option B is correct.

COMPUTERS

31. (A) For-NEXT is not a looping statement.

32. (C) Mozilla Firefox, Opera, and Internet Explorer are all web browsers used to access websites.

Google is a search engine, not a browser.

33. (D) Graphic tablet is a hardware input device.

Touch screen is also an input device.

Smart cards are often called input devices.

Therefore 'none of these' 'D' is correct.

34. (D) Fourth generation computers (1971 onwards) used microprocessors, which integrate thousands of integrated circuits (ICs) onto a single silicon chip.

Semiconductors and transistors were used in earlier generations.

Vacuum tubes were used in first-generation computers.

35. (B) the correct statement is DO WHILE count >= 1 not DO WHILE count <= 1

36. (A) Chrome, Safari, and Opera are all web browsers.

Apple is a technology company, not a browser.

37. (C) Protocol : A set of rules or guidelines that computers in a network must adhere to.

38. (A) In HTML, both <b> and make text appear bold.

The difference is semantic: <b> is purely visual, while indicates importance.

<bold>, <dar>, and <emp> are not valid HTML tags for bold text.

39. (A) A web server is a program that uses HTTP protocol to serve the files that form web pages to users, in response to their requests. What are forwarded by their computer's HTTP clients.

40. (A) In HTML, tags are special formatting codes used to define and present content on a web page.

Examples: <p> for paragraph, <h1> for heading, <a> for link.

Attributes (option D) provide additional

information about tags, but the tags themselves control the formatting.

Text and values are content or data, not formatting codes.

41. (C) RETURN: The RETURN command that is used to move the control of a program to a specific line of code.

42. (A) Stage: The stage is the main workspace of Flash, all your compositional elements (movie clips, buttons, graphics etc.) will be arranged here.

43. (B) FPS standards for frames per second.

44. (A) Object linking and embedding

45. (D) Trojan, Alien.298 and Amoeba.A all are comes under different types of viruses.

ENGLISH

46. (A)

47. (D)

48. (D)

49. (C) 'starving' is the synonym of 'famished'.

50. (B)

The End