



**UNIFIED CYBER OLYMPIAD (UPDATED)**

**CLASS - 7**  
**Question Paper Code : UC394**

**KEY**

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

**SOLUTIONS**

**MENTAL ABILITY**

01. (C)  $\frac{-19}{4} = -4.75$

$\frac{-34}{7} = -4.85$

$\frac{-13}{3} = -4.33$

$\frac{-37}{8} = -4.625$

$\therefore -4.85 < -4.75 < -4.625 < -4.33$

i.e.,  $\frac{-34}{7} < \frac{-19}{4} < \frac{-37}{8} < \frac{-13}{3}$

Hence, option 'C' is in the ascending order.

02. (B) Let Rahul's income be ₹x.

$\therefore$  Rohit's income

$$= ₹x - \frac{₹x \times 20^1}{100 \times 5} = \frac{₹5x - ₹x}{5}$$

$$= \frac{₹4x}{5}$$

Rahul's Income more than Rohit

$$= ₹x - \frac{₹4x}{5} = \frac{₹x}{5}$$

Percentage of income of Rahul is more than Rohit

$$= \frac{\text{More income of Rahul than Rohit}}{\text{Rohit's income}} \times 100$$

$$= \frac{\frac{\text{₹}x}{\text{₹}4x} \times 100}{5} = 25\%$$

03. (A)  $SP = MP \frac{(100 - d)}{100}$

$$= ₹18,000 \frac{(100 - 20)}{100}$$

$$= ₹ 180 \times 80$$

$$= ₹ 14,400$$

Given there is a loss of 4%

$$\therefore \text{CP of the machine} = \frac{sp \times 100}{(100 - l)}$$

$$= \frac{₹14,400 \times 100}{(100 - 4)}$$

$$= \frac{₹14400 \times 100}{96} = ₹ 15,000$$

04. (C) Profit = SP - CP = ₹ 780 - ₹ 650 = ₹130

$$\text{Profit percentage} = \frac{\text{Profit}}{\text{cp}} \times 100$$

$$= \frac{₹130}{₹650} \times 100 = 20\%$$

05. (C) Interest for 3 years

$$= ₹ 51,200 - ₹ 41,600$$

$$= ₹ 9600$$

$$\therefore \text{Principal} = \text{Amount for 3 years} - \text{interest for 3 years}$$

$$= ₹ 41,600 - ₹ 9,600$$

$$= ₹ 32,000$$

$$I = \frac{\text{PTR}}{100}$$

$$₹ 9600 = \frac{₹ 32,000 \times 3 \times R}{100}$$

$$R = \frac{₹ 9600}{₹960} = 10\%$$

06. (A) Given  $x : y = 3 : 4$  and  $y : z = 7 : 8$   
'y' is the common ratio of both given ratios

$$\therefore \text{LCM of } y \text{ ratios} = 4 \times 7 = 28$$

$$\therefore x : y = 3 \times 7 : 4 \times 7 = 21 : 28$$

$$y : z = 7 \times 4 : 8 \times 4 = 28 : 32$$

$$x : y : z = 21 : 28 : 32$$

$$\therefore x : z = 21 : 32$$

07. (B) Perimeter

$$= \left( \frac{7x^3}{2} - \frac{x^2}{2} + \frac{5}{3} + \frac{3x^3}{2} + \frac{7x^2}{4} - x + \frac{1}{3} + \frac{3x^2}{2} - \frac{5x}{2} - 2 \right)$$

$$= \left( \frac{7x^3}{2} + \frac{3x^2}{2} \right) + \left( -\frac{x^2}{2} + \frac{7x^2}{4} + \frac{3x^2}{2} \right)$$

$$+ \left( -x - \frac{5x}{2} \right) + \left( \frac{5}{3} + \frac{1}{3} - 2 \right)$$

$$= \left( \frac{7x^3 + 3x^3}{2} \right) + \left( \frac{-2x^2 + 7x^2 + 6x^2}{4} \right)$$

$$+ \left( \frac{-2x - 5x}{2} \right) + \left( \frac{5 + 1 - 6}{3} \right)$$

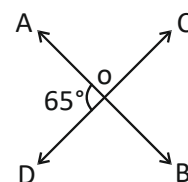
$$= \frac{10x^3}{2} + \frac{11x^2}{4} - \frac{7x}{2} + \left( \frac{0}{3} \right)$$

$$= \left( 5x^3 + \frac{11x^2}{4} - \frac{7x}{2} \right) \text{ cm}$$

08. (D) Given  $\angle AOD = 65^\circ$

$$\Rightarrow \angle BOC = \angle AOD = 65^\circ$$

[ $\because$  vertically opposite angles]



$$\text{But } \angle AOD + \angle DOB + \angle BOC + \angle COA = 360^\circ$$

[ $\therefore$  complete angle]

$$65^\circ + \angle DOB + 65^\circ + \angle COA = 360^\circ$$

$$\angle DOB + \angle COA + 130^\circ = 360^\circ$$

$$\angle DOB + \angle COA + 360^\circ - 130^\circ = 230^\circ$$

09. (C) Breadth of the rectangle

$$= \frac{\text{Area}}{\text{Length}} = \frac{45 \frac{5}{16} \text{ cm}^2}{6 \frac{1}{4} \text{ cm}}$$

$$= \frac{\frac{725}{16} \text{ cm}^2}{\frac{25}{4} \text{ cm}}$$

$$= \frac{725}{16} \times \frac{4}{25} \text{ cm}$$

$$= \frac{29}{4} \text{ cm}$$

Perimeter of the rectangle =  $2(l + b)$

$$= 2 \left( \frac{25}{4} \text{ cm} + \frac{29}{4} \text{ cm} \right)$$

$$= 2 \left( \frac{25 + 29}{4} \right) \text{ cm}$$

$$= 2 \times \frac{54}{4} \text{ cm}$$

$$= 27 \text{ cm}$$

10. (A) Let the second expression be 'k'

$$\text{Given } \left( \frac{13x}{7} + \frac{12y}{5} + \frac{11xy}{2} \right) + k$$

$$= \frac{51xy}{14} - \frac{19x}{35} - \frac{31y}{10}$$

$$\therefore k = \left( \frac{51xy}{14} - \frac{11xy}{2} \right) + \left( \frac{-19x}{35} - \frac{13x}{7} \right)$$

$$+ \left( \frac{-31y}{10} - \frac{12y}{5} \right)$$

$$= \left( \frac{51xy - 72xy}{14} \right) + \left( \frac{-19x - 65x}{35} \right)$$

$$+ \left( \frac{-31y - 24y}{10} \right)$$

$$= \frac{-26^{13}xy}{14} - \frac{84^{12}x}{35} - \frac{55^{11}y}{10}$$

11. (C) Given  $\angle AOD = 180^\circ$

But  $\angle AOC + \angle COD = 180^\circ$

[ $\therefore$  straight angle]

$$115^\circ + \angle COD = 180^\circ$$

$$\angle COD = 180^\circ - 115^\circ = 65^\circ$$

$$\angle AOB + \angle BOD = 180^\circ$$

[ $\therefore$  Straight angle]

$$\angle AOB + 135^\circ = 180^\circ$$

$$\angle AOB = 180^\circ - 135^\circ = 45^\circ$$

But  $\angle AOB + \angle BOC = 115^\circ$

$$45^\circ + \angle BOC = 115^\circ$$

[ $\therefore \angle AOB = 45^\circ$ ]

$$\angle BOC = 115^\circ - 45^\circ$$

$$\angle BOC = 70^\circ$$

12. (A) Given  $\frac{2x-3}{3x+2} = \frac{7}{4} \Rightarrow 4(2x-3) = 7(3x+2)$

$$\Rightarrow 8x - 12 = 21x + 14$$

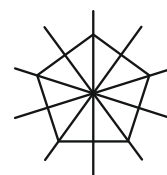
$$\Rightarrow 8x - 21x = 14 + 12$$

$$-13x = 26$$

$$x = \frac{26}{-13}$$

$$x = -2$$

13. (C) A regular pentagon has 5 lines of symmetry.



14. (B) If the length and breadth of a rectangle are given, then we can construct a rectangle.

15. (D) Let the equal side of the isosceles triangle be  $x$  cm

$$\text{Given third side} = \frac{4}{3}x$$

$$\text{Given } x + x + \frac{4}{3}x = 40 \text{ cm}$$

$$2x + \frac{4x}{3} = 40 \text{ cm}$$

$$\frac{6x + 4x}{3} = 40 \text{ cm}$$

$$10x = 40 \times 3 \text{ cm}$$

$$x = \frac{120}{10} \text{ cm}$$

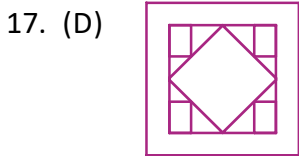
$$x = 12 \text{ cm}$$

Biggest side

$$= \frac{4x}{3} = \frac{4}{3} \times 12 \text{ cm} = 16 \text{ cm}$$

### REASONING

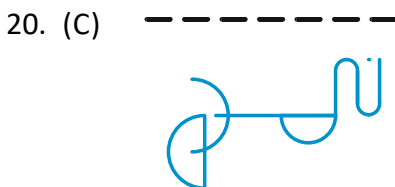
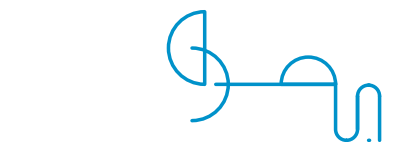
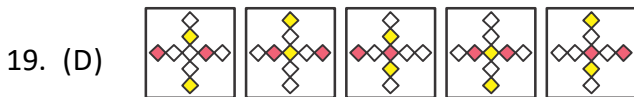
16. (D) If North-East is forward, then turning left ( $90^\circ$ ) from North-West will point one towards North.



18. (B) The new sequence is:  
M L K J I H G F E D C B A Z Y X W V U T S  
R Q P O N

The 10<sup>th</sup> letter from the left is D.

The 5<sup>th</sup> letter to the right of D is I.



21. (D)

22. (D)  $11 \times 12 \times 13 = (1 + 1)(1 + 2)(1 + 3) = 234$   
and  $24 \times 23 \times 35 = (2 + 4)(2 + 3)(3 + 5) = 658$

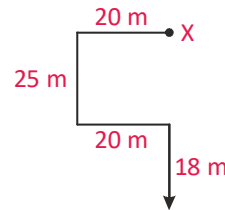
Similarly,

$$31 \times 43 \times 54 = (3 + 1)(4 + 3)(5 + 4) = 479$$

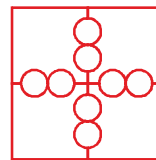
23. (A) **BABY PLUMB**

Hence the two new words are BAY and PLUMB.

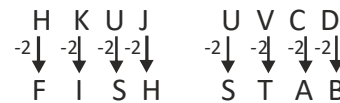
24. (A)



25. (B)



26. (D)



27. (D)

In alphabetical order,  
 $M + I = 13 + 9 = 22 \div 2 = 11$   
 $M + A = 13 + 1 = 14 \div 2 = 7$   
 $H + J = 8 + 10 = 18 \div 2 = 9$   
 $D + E = 4 + 5 = 9$

$\therefore$  9 cannot be exactly divided by 2. So, option (D) is odd one.

28. (D)

There are six numbers i.e., 6, 2, 4, 4, 2, 2 in the series which are divisible by an even number that are followed by a number divisible by an odd number.

5 (6) 7 (2) 5 9 2 (4) 9 3 6 (4) 3 9 (2) 1 0 (2) 1 5 8 2

29. (B)

Sum of the digits of the first number is 2 more than the sum of the digits of the second number.

$$\text{i.e., } 5 + 8 + 3 = 16$$

$$2 + 9 + 3 = 14, \text{ similarly } 4 + 8 + 8 = 20$$

$$3 + 7 + 8 = 18$$

30. (D)

7 triangles are there in the given figure.

## COMPUTERS

31. (A) The reason this statement is incorrect is because computers primarily process digital signals, but with appropriate hardware (like Analog-to-Digital Converters), they can also process analog signals. This means they can take analog signals, convert them to digital, and then process them. This is how things like audio input from a microphone or video input from a camera can be processed by a computer
32. (D) An optical disk is a type of storage media that uses light (usually a laser) to read or write data. Digital versatile disks, or DVDs as they're often called, are an example of optical disks. When you play a movie on a DVD player, the player uses a laser to read the data from the DVD. On the other hand, memory disks, magnetic disks, and hard disks don't use light or lasers in the same way. So, the correct answer is (D) Digital versatile disk.
33. (D) The correct answer is (D) Both B and C. While option B uses the AVERAGE function directly to find the average, option C calculates the total of the numbers and then divides by 5, which is another way to compute the average.
34. (D) Internet service providers are Reliance, Tata Indicom, MTS
35. (D) The correct answer is option (D) Relative Referencing. Excel will adjust cell references based on the relative position of the new cell, unless the original formula used absolute or mixed references.
36. (A) HotBot is a search engine, which is like a tool that helps people find things on the internet. It was created by a company called Wired Digital. Later, another company called Lycos bought it, so now Lycos owns HotBot. Google, Yahoo, and Dec are other companies that have their own things they work on, but they don't own HotBot. Out of the choices, only Lycos is the correct owner of HotBot.
37. (C) The correct answer is option (C) Ctrl + F8. This command opens the "Convert to Symbol" dialog, allowing you to create movie clips, buttons, or graphics symbols.
38. (C) Chrome is known for its regular updates and adaptability to the newest web technologies, which can make it more compatible with platforms like Safari Montage
39. (A) The 'FOR...NEXT' loop in QBasic is used to repeat a block of code for a specified number of iterations. The loop runs from a starting value to an ending value, with each iteration typically incrementing or decrementing a loop control variable.
40. (C) In Flash, the Main Stage represents the area where animations and graphics are displayed. The timeline associated with it is where the keyframes, animations, and layers are managed.
41. (C) The correct answer is Beginner's All-Purpose Symbolic Instruction Code. BASIC is an acronym that stands for Beginner's All-Purpose Symbolic Instruction Code. It is a high-level programming language that was designed to be easy to learn and use for beginners. It was widely used in the 1960s and 1970s and played a significant role in the early development of personal computers.
42. (D) The "Classic Text" option is used to input and display static text elements that are not intended to be animated or interactive.
43. (B) QBasic supports various variable types like INTEGER (for whole numbers), SINGLE (for floating-point numbers), and STRING (for text). However, there is no DECIMAL variable type in QBasic.
44. (A) The correct answer is option (A) =IF(B1>10, "Yes", "No"). This formula uses the IF function to check if the value in cell B1 is greater than 10 and displays "Yes" if true, and "No" if false.
45. (B) In the Flash software, Flash is the symbols that can be again and again. These objects can be in the form of Graphics, buttons, Movie clips, Sounds, and videos. In the Flash movies, the symbols copies that are been made used are to be termed as Instances.

**ENGLISH**

46. (B) The sentence would be: "He can handle so many things at the office. He is really a jack of all trades."

The idiom "jack of all trades" refers to someone who is competent at many skills or tasks.

47. (A) "Neha has a pain in her shoulder.

48. (A) The sentence would be: "During the war in China, many atrocities were committed; many soldiers were killed."

The semicolon is used to link two independent clauses that are closely related in thought.

49. (B) So the sentence would be: "I cannot believe that you are allied with them. They are our sworn adversaries."

50. (A) There is no error in the given sentence.

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**THE END**

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