UNIFIED COUNCIL
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UNIFIED COUNCIL OLYMPIADS

UIC
Unified International Cyber Olympiad

UNIFIED INTERNATIONAL CYBER OLYMPIAD (UPDATED)

CLASS - 9
Question Paper Code : 3B127

KEY

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

SOLUTIONS

MENTAL ABILITY

1. **(D)** Option (D) is true

2. **(B)** $\sqrt{5} \approx 2.24, \sqrt{6} \approx 2.45$

Since $2.24 < 2.3 < 2.45$

2.3 lies between $\sqrt{5}$ and $\sqrt{6}$

3. **(C)** Area of triangle "A" = $\frac{\sqrt{3}}{4}(a)^2 = \frac{\sqrt{3}}{4}(2b)^2$

$= 4 \times \frac{\sqrt{3}}{4}b^2$ = 4 times area of triangle "B"

4. **(A)** $x^8 + 8 = (x + 2)(x^2 - 2x + 4)$

Hence $x + 2$ is a factor

5. **(C)** BC = $\sqrt{(100-76)^2 + (80-62)^2}$

$= \sqrt{24^2 + 18^2}$

$= \sqrt{576 + 324}$

$= \sqrt{900}$ = 30 feet

Total length of wire = 62 f + 30 f = 92 f.

6. **(D)** Option (D) graph represents $y = -3x + 4$ line

7. **(C)** Given $A = a + \frac{50}{100}a = \frac{3}{2}a$

New surface area $= 6\times\left(\frac{3}{2}a\right)^2 = 6\times\frac{9a^2}{4}$

Increased area $= 6\times\frac{9a^2}{4} - 6a^2 = 6\times\frac{5}{4}a^2$

Increased area percentage =

$$\frac{6\times\frac{5}{4}a^2}{6a^2}\times 100 = 125\%$$

8. **(B)** $$\frac{a^3+b^3+c^3-3abc}{a^2+b^2+c^2-bc-ca}$$

$$=\frac{(a+b+c)(a^2+b^2+c^2-ab-bc-ca)}{(a^2+b^2+c^2-ab-bc-ca)}$$

9. **(D)** Ratio does not exist because we can not compare volume & surface area because their units are not same.

10. **(A)** $5^2 - 2^3 = 17$ which is divisible by 17

$5^4 - 2^6 = 625 - 64 = 56^1 = 17 \times 31$ which is divisible by 17

11. **(A)** Distance from the y axis = absolute value of the x-coordinate $= |-5| = 5$ units

12. **(A)** Degree of remainder must be less than the degree of the divisor

13. **(B)** $4x^2 + 4x - 3 = 4x^2 + 6x - 2x - 3 = 2x(2x + 3) - 1(2x + 3) = (2x + 3)(2x - 1)$

14. **(A)** Since $a = a^{24xyz}$

$24xyz = 1$

$$xyz = \frac{1}{24}$$

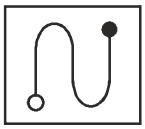
15. **(C)** It is in inverse proportion

$\therefore$ $1600 \times 60 = 1200 \times x$

$$\frac{1600\times 60}{1200} = x$$

$x = 80$ days

REASONING

16. **(B)** 

17. **(B)** Apply the same pattern : –2, +1, –1

E → C, E → F, H → G

18. **(C)** The difference are

+12, +16, +20, +24, +28, +32

19. **(D)** NILE → river

THAMES → river

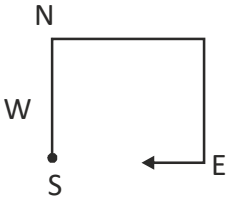
LIVERPOOL → river

MANGO → fruit

MANGO is different from others.

20. **(D)** There are 9 parallelograms in the given figure.

21. **(C)** Everytime left most image 1 step forward and turn left side. Every time one new object is placed middle bottom.

22. **(D)** 

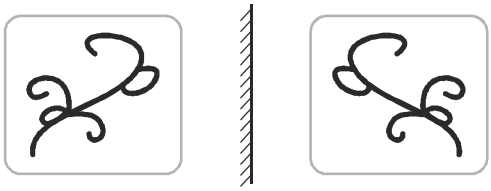
Finally Ravi faces west direction.

23. **(D)** INSTALMENT

In STAMINA we use letter 'A' two times.

So, STAMINA is cannot be formed with the letters in INSTALMENT.

24. **(A)** '1' is the opposite face to '6'.

25. **(D)** 

26. **(D)** In 1st and 2nd object moves clockwise and anticlockwise alternately. 1st object is previous segment last object.

27. **(C)** $\frac{81}{9}-\frac{56}{7}=9-8=1$

$\frac{252}{12}-\frac{72}{6}=21-12=9$

$\frac{36}{3}-\frac{27}{9}=12-3=9$

28. **(C)** The only son of Rohan's grand father is Rohan's father. The wife of Rohan's father is Rohan's mother therefore Rohan is the woman's son.

29. **(B)** Single horizontal line is coded as 'J'.

A is coded as 'R'

So, the code for the last object is JR

30. **(D)** From the two words little apples $\rightarrow$ Leap is a new word formed.

COMPUTERS

31. **(B)** Spell check is a software program that corrects spelling errors in word processing.

32. **(B)** ctrl + D is used to open the font dialogue box in MS-Word.

33. **(A)** Operating system is a set of programs which controls the working of a computer.

34. **(A)** 16 bits is the smallest unit memory among the given options.

35. **(D)** All of these.

36. **(D)** Both (B) and (C).

37. **(B)** Writing and editing text.

38. **(A)** Logical operators used to combine two or more conditions to generate the final result.

39. **(B)** Bit, Byte, Kilobyte, Megabyte.

40. **(C)** GNU/Linux is not an application software.

41. **(C)** Antivirus software is an example of utility software.

42. **(B)** .PDF file extensions cannot be edited in photoshop.

43. **(D)** Weather conditions have no effect on wi-fi signals.

44. **(C)** Preservation is not a phase of a e-commerce.

45. **(B)** 3, 1, 2.

ENGLISH

46. **(B)** Lice is a plural noun.

47. **(A)** Paltry is a synonym of 'Meagre'

48. **(D)** Is he being helped by me ?

49. **(B)** The committee has given its assent to the proposal.

50. **(D)** Adjective : Word : : Cardinal : Number

The End