UNIFIED COUNCIL
Foundation for Success

UNIFIED COUNCIL OLYMPIADS

UIC
Unified International Cyber Olympiad

UNIFIED INTERNATIONAL CYBER OLYMPIAD

CLASS - 10

Question Paper Code : 3B127

KEY

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

SOLUTIONS

MENTAL ABILITY

1. **(C)** Base area = $\frac{1}{2}$ × h (a + b)

= $\frac{1}{2}$ × 32 m (4.5 + 2.5) m = 112 mts^2

Volume of the pool = Base area × breadth

= 112 mts^2 × 9.5 mts = 1064 mts^3

2. **(A)** Sum of roots = 5, Product = 4

New sum = $5^2 - 2(4) = 17$

New product = $4^2 = 16$

Required equation = $x^2 - 17x + 16 = 0$

3. **(C)** Let $\frac{1}{x+y} = a$ and $\frac{1}{x-y} = b$

$\therefore$ 25a – 3b = 1 ..... (1)

40a + 2b = 5 ..... (2)

eq (1) × 2 = 50a – 6b = 2

eq (2) × 3 = 120a + 6b = 15

170a = 17

a = $\frac{1}{10}$ and b = $\frac{1}{2}$

$\therefore$ $x + y = 10$ and $x - y = 2$

$\therefore$ $x = 6$ and $y = 4$

4. **(B)** Perfect squares on a die one 1 and 4

probability = $\frac{2}{6} = \frac{1}{3}$

5. **(A)** Given p, q, r are in AP

$2q = p + r$

$\therefore 2q^2 = pq + qr$

$\therefore pq + qr - 2q^2 = 0$

6. Delete

7. **(A)** 2 and 5 are the factors of the denominator then the given rational number is a terminating decimal.

8. **(D)** Given $2\pi r = \pi r^2$

$\therefore r = 2$

$\therefore$ diameter = $2r = 4$

9. **(B)** Arranging the numbers in ascending order

11, 15, 18, 19, 22, 25, 27

The middle value is 19

10. **(C)** Given $b^2 - 4ac \geq 0$

$k^2 - 4 \geq 0$

$(k + 2)(k - 2) \geq 0$

$\therefore k \leq -2 \cup k \geq 2$

11. **(B)** $S = \frac{a+b+c}{2} = \frac{(50+78+112)}{2} = 120$ cm

$\Delta = \sqrt{s(s-a)(s-b)(s-c)} = \sqrt{120 \times 70 \times 42 \times 8}$ cm^2

$= 1680$ cm^2

But $\frac{1}{2}$ bh = 1680 cm^2

$\frac{1}{2} \times 112$ cm $\times$ h = 1680 cm^2

h = 30 cm

12. **(D)** Diameter of sphere = side of cube = 5 cm

$\therefore$ radius of sphere = $\frac{5}{2}$cm

volume of sphere = $\frac{4}{3}\pi r^3$

$= \frac{4}{3} \times \pi \times \frac{5}{2} \times \frac{5}{2} \times \frac{5}{2}$cm^3 $= \frac{125\pi}{6}$cm^3

13. **(B)** Product of any three consecutive positive integers is always divisible by 6

$\therefore n^3 - n = n(n^2 - 1) = (n - 1)(n)(n + 1)$

$\therefore n^3 - n$ is always divisible by 6

14. **(B)** $\sqrt{81} = 9$, which is an integer

15. **(D)** We get only once chance of 52 mondays and 53 sundays in a leap year among '7' changes

$\therefore$ required probability = $\frac{1}{7}$

REASONING

16. **(B)** T E M P O R A L

1 2 3 4 5 6 7

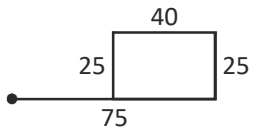
1) T E R A 2) R A T E

More than one word formed.

17. **(C)** 2 adjacent numbers are 3, 4, 1, 6

$\therefore$ 2 opposite number is 5

18. **(D)**



75 – 40 = 35 metres

19. **(D)** Δ is faced outside in option (D)

So, option (D) is different.

20. **(B)**

1-A	5-E	6-F	10-J
11-K	15-O	16-P	20-T
7-G	11-K	12-L	16-P
17-Q	21-U	22-V	26-Z

21. **(A)** 1 cube

22. **(A)** Hari $\longleftrightarrow$ Asha $\xrightarrow{\text{Bro}}$ Arun $\xrightarrow{\text{Brother}}$ Ram

Hari is brother-in-law to Ram

23. **(C)** $13^2 = 169$ $5^2 = 25$

$3^2 = 9$ $6^2 = 36$

$13 \times 3 = 39$ $5 \times 6 = 60$

$39 \times 30 = 1170$

$7 \times 3 = 21$ $2 \times 9 = 18$

$21 \times 18 = 378$

Similarly

$2 \times 9 = 18$ $12 \times 6 = 72$

$72 \times 18 = 1296$

24. **(B)** My favourite

Escape artist

25. **(B)** Some politicians are educated but they are neither poets nor scientists.

26. **(C)** T3S4P5H6 | 6H5P4S3T

27. **(D)** C $\xrightarrow{-2}$ A $\xrightarrow{+3}$ D $\xrightarrow{+3}$ G $\xrightarrow{-2}$ E

S $\xrightarrow{-2}$ H $\xrightarrow{+3}$ K $\xrightarrow{+3}$ N $\xrightarrow{-2}$ L

Q $\xrightarrow{-2}$ O $\xrightarrow{+3}$ R $\xrightarrow{+3}$ U $\xrightarrow{-2}$ S

E $\xrightarrow{-2}$ C $\xrightarrow{+3}$ F $\xrightarrow{-3}$ C $\xrightarrow{+3}$ I

28. **(A)** Ravi's father's only son is Ravi. The girl is Ravi's only daughter, so she is Ravi's daughter.

29. **(C)** No line in triangle is coded as S.

■ is coded as N

● is coded as Z

□ is coded as M

∴  is coded as 'SM'.

30. **(B)** 

In option (B) the given figure is hidden.

COMPUTERS

31. **(B)** =sum(D_1 : D_5) is used to add all numbers in a range of cells where as in option (A, C) the function add only two numbers.

32. **(B)** A modem is a hardware device that interfaces between telephone lines and computer equipment.

33. **(A)** In order to transfer information from one computer to another, each computer needs an identity which is called "internet protocol address" or IP address.

34. **(B)** Properties window displays the properties of a particular control.

35. **(A)** A class is a user defined prototype from which objects are created. It represents the set of properties or methods that are common to all objects of one type.

36. **(C)** Copyright is the right to copy. This means that are original creators of products and anyone they give authorization to are the only ones with the exclusive right to reproduce the work.

37. **(A)** .mdb is the extension of MS-access files.

38. **(A)** Installing a good antivirus program.

39. **(D)** An Ms-powerpoint slide can be combination of text, graphics, audio, video, animation and text.

40. **(A)** 'Sort' option arranges the data in ascending/descending order.

41. **(A)** MS-Access is a DBMS software.

42. **(C)** 'F5' key used to run slide show.

43. **(D)** <LI> is used in HTML to list the items.

44. **(B)** 'OL' is used in HTML to order a list.

45. **(D)** A range of cells by range name

An entire worksheet

A single worksheet

ENGLISH

46. **(C)** Fell

47. **(D)** Their

48. **(B)** His writing is worse than that of his cousin

49. **(A)** To exonerate

50. **(D)** She says that she is happy to be here this evening.