

# Sample Paper

## Class 11

**Unicus Critical Thinking Olympiad (UCTO)** 

Section	Total Questions	Marks per Questions	Total Marks		
Classic Section	40	1	40		
Scholar Section	10	2	20		
Grand Total	50		60		

### Classic Section (Each Question is 1 Mark)

1. Find the missing number in the given series:

1024 256 64 ? 4

- a. 16
- c. 8

- b. 2d. 32
- 2. In the following question, find out the correct pair of words which will make an appropriate analogical relationship between the two words to the left of the sign of double colon (::) and the same relationship between, the two words to the right of the sign of double colon (::):

ACEG: IKMO:: PRTV:?

- a. QRUW
- c. WXAC

- b. JLMP
- d. XZBD
- 3.  $8 \times (4/3) + 9 5 = 10$  Which of the following two numbers should be interchanged to balance the above equation?
  - a. 4, 3
  - c. 8, 4

- b. 5, 3
- d. 9, 3
- 4. In the following question, choose the correct mirror image from the answer figures:

#### А *шишшш* В



a.



c.



b.



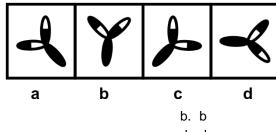
d.



- 5. Shubham walks 6 m towards East, then turns right and walks 9 m. Again, he turns to his left and walks 6 m. At what distance is he now from his original point?
  - a. 15 m
  - c. 18 m

- b. 21 m
- d. Cannot be determined

6. In the following question, four figures are given. Three are similar in a certain way and so form a group. Find out which one of the figures does not belong to that group:



a. a

c. c

d. d

7. In the given figure, no two adjacent areas can have the same colour, find the least number of colours to be needed to fill in the figure areas.



a. 3

c. 5

b. 4

d. 6

8. Read the following information carefully and answer the question given below: A cube is painted red on two adjacent surfaces and black on the surfaces opposite to red surfaces and green on the remaining faces. Now, the cube is cut into 64 smaller cubes of equal size. How many smaller cubes have only one surface painted?

a. 8

c. 24

b. 16

d. 32

9. In the following series, replace the question mark (?) with a suitable option:

12, 12, 24, 72, 288, ?

a. 1440

b. 1326

c. 1456

d. 1235

10. If > denotes +, < denotes -, + denotes ÷, ^denotes x, - denotes =, x denotes > and = denotes <, then choose the correct equation from the following:

a.  $28 + 4^2 = 6^4 + 2$ 

b.  $13 > 7 < 6 + 2 = 3 ^ 4$ 

c. 9 > 5 > 4 - 18 + 9 > 16

d.  $9 < 3 < 2 > 1 \times 8^2$ 

11. In the following question, one number is wrong in the series. Find out that number:

2, 4, 8, 16, 48, 64, 128, 256

a. 4

b. 8

c. 16

d. 48

12. Which of the following will be the correct mirror image of the given figure, when the mirror is placed vertically to the right?



a.



c



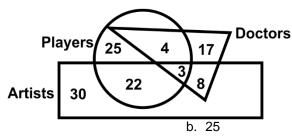
b.



d.



13. Study the diagram carefully and answer the question. In the diagram, the rectangle represents 'artists', the circle represents 'players' and the triangle represents 'doctors'. How many doctors are neither players nor artists?



- a. 4
- c. 8

- d. 17
- 14. In the following question, choose which number completes the second pair in the same way as the first pair:
  - 2/3:31::2/4:?
  - a. 32
  - c. 62

- b. 41
- d. 68
- 15. In a certain code, 'WHEN' is written as 'VGFO', then how is 'BEAR' written in that code?
  - a. DBAS

b. ADBS

c. COBT

- d. DBCT
- 16. By following certain rearrangement code, 'why are you so late' is decoded as 'are late so why you'. How will 'please do come on time' be decoded using that logic?
  - a. do time on please come

b. time please on time come

c. come do on please time

d. time do please on time

17. Two years ago, Harry's age was 1.5 times the age of Pam. Peter's present age is 0.5 times that of Harry's age today. Who among the three is the youngest?

a. Pam

b. Harry

c. Peter

d. Pam and Peter

18. Study the following information carefully and answer the question that follows:

(i) 'A \$ B' means 'A is the mother of B'.

- (ii) 'A # B' means 'A is the father of B'.
- (iii) 'A @ B' means 'A is the husband of B'.
- (iv) 'A % B' means 'A is the daughter of B'.

Which of the following means R is the wife of P?

a. P#Q%R

b. P\$Q%R

c. P@Q\$R

d. P#Q\$R

19. Find the next/missing terms(s) in the given series:

2, 23, 7, 20, 12, 17, ?, ?

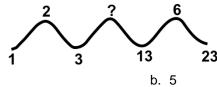
a. 12,19

b. 17, 14

c. 23, 17

d. 22,14

20. In the following question, determine the number that replaces the question mark:



a. 6

c. 4

d. 10

21. A person starts from his house and travels 6 km in North direction, now he turns to the right and travels another 8 km to reach his office, calculate the shortest distance between his house and office and in which direction his office is with respect to his house?

a. 10 km, North-East

b. 5 km, North-East

c. 10 km, South-West

d. 5 km, South-East

22. If every alternate letter in the word 'SOLITARY' starting from the first letter is replaced by the previous letter and each of the remaining letters is replaced by the next letter in the English alphabet, which of the following will be the third letter from the right end after the substitution?

a. B

b. S

c. Z

d. K

23. Select the answer figure in which the question figure is embedded:









d.



24. In the following question, choose the correct mirror image from the alternatives, when the mirror is placed on the line AB:









b.



d.



25. Which one set of letters, when sequentially placed at the gaps in the given letter series, shall complete

- a. KKSY
- c. YKSK

- b. KYSY
- d. YSSK
- 26. Which one set of letters, when sequentially placed at the gaps in the given letter series, shall complete

a. CQD

b. QDC

c. DQC

- d. QCD
- 27. Which one set of letters, when sequentially placed at the gaps in the given letter series, shall complete

a. OLNO

b. LONO

c. NOLO

d. ONNO

28. Select the option figure which satisfies the same conditions of the placement of dots as in the question figure:



a.





b.



d.



29. A word and number arrangement machine when given an input line of words and numbers rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement.

Input: 42 baby dolly 49 6 east 16 them output 100 shout 8 pond 4 jungle

- Step I: baby 4 42 dolly 49 6 east 16 them output 100 shout 8 pond jungle
- Step II: baby 4 dolly 6 42 49 east 16 them output 100 shout 8 pond jungle
- Step III: baby 4 dolly 6 east 16 42 49 them output 100 shout 8 pond jungle
- Step IV: baby 4 dolly 6 east 16 jungle 8 42 49 them output 100 shout pond
- Step V: baby 4 dolly 6 east 16 jungle 8 output 49 42 them 100 shout pond
- Step VI: baby 4 dolly 6 east 16 jungle 8 output 49 pond 42 them 100 shout
- Step VII: baby 4 dolly 6 east 16 jungle 8 output 49 pond 42 shout 100 them
- Step VII is the last step of the above input; as the desired arrangement is obtained.

As per rules followed in the above steps, answer the following question for the given input: Input: ink 17 silent 121 beast 15 49 Goal 9 power 64 3 food 20 weed

What is the position of 'silent' in Step IV?

a. Sixth from left

b. Fifth from left

c. Fifth from right

d. Sixth from right

30. If all the letters of the word "NETHERLAND" are arranged in reverse alphabetical order (ZYX....) from left to right, then which of the following letters will be fifth from the left end of the new arrangement?

a. H

b. E

c. L

d. N

31. How many such pairs of letters are there in the word "INSERT" which has as many letters between them as there are in the English alphabetical series?

a. Two

b. One

c. Three

d. None

32. How many such unique letters are there in the word "DEFINATION" which has even place values in the alphabet series?

a. Five

b. Three

c. Four

d. Six

33. Answer the question based on the following arrangement: X W 5 L S 2 & Z % O M 1 N 3 G B I 9 D 6 Y 4 ~ J 7 E

Which of the following is exactly midway between the tenth element from the right and fifth element from the left end?

a. O

b. 1

c. %

d. M

34. Answer the question based on the following arrangement:

M 7 Σ 8 L P @ ? 6 N B T Y 3 2 = E \$ 4 9 © G H 5

How many such symbols are there in the arrangement each of which is immediately preceded by a number?

a. Two

b. Three

c. Four

d. None of these

35. How many rectangles are there in the given figure?



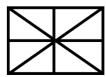
a. 6

b. 5

c. 4

d. 7

36. How many triangles are there in the given figure?



- a. 8
- c. 16

- b. 14
  - d. 15

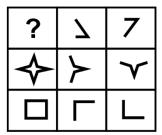
37. How many rectangles are there in the given figure?



- a. 4
- c. 6

- b. 5
- d. 7

38. Select an appropriate figure from the given alternatives that would complete the figure matrix:



a.



c. ( )

b.



- 39. If 2436 = 36 and 5552 = 30, then 6732 = ?
  - a. 32
  - c. 34

- b. 36
- d. 39
- 40. If DEER = 12215 and HIGH = 5645, how will you code HEEL?
  - a. 2328

b. 3449

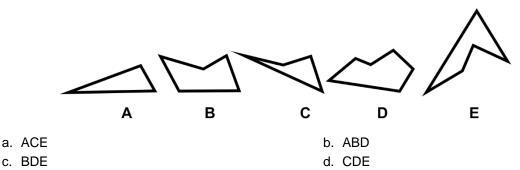
c. 4337

d. 5229

## Scholar Section (Each Question is 2 Marks)

- 41. In the question given below there are two statements A and B. These statements may be either independent causes or may be effects of independent causes or of a common cause. One of these statements may be the effect of the other statement. Read both the statements and decide which of the following answer choices correctly depicts the relationship between these two statements.
  - A. The prices of vegetables have been increased considerably during the summer.
  - B. There is tremendous increase in the temperature during this summer there by damaging crops greatly.

- a. Statement A is the cause and statement B is its effect
- b. Statement B is the cause and statement A is its effect
- c. Both the statements are independent causes
- d. Both the statements are effects of independent causes
- 42. In the following question, five figures are given. Out of them, find the three figures that can be joined to form an equilateral triangle (you may increase or decrease the size of the given figures to fit):



- 43. If in a certain code language 'fruits are sweet' is written as 'pa ma la' and 'you are sweet' is written as 'pa ma ta', then find code for 'fruits':
  - a. ta

b. ma

c. pa

- d. la
- 44. In the question given below, there are two statements A and B. These statements may be either independent causes or may be effects of independent causes or of a common cause. One of these statements may be the effect of the other statement. Read both the statements and decide which of the following answer choices correctly depicts the relationship between these two statements.
  - A. The police authority has recently caught a group of house breakers.
  - B. The citizens' group in the locality have started night vigil in the area.
  - a. Statement A is the cause and statement B is its effect
  - b. Statement B is the cause and statement A is its effect
  - c. Both statements are independent causes
  - d. Both statements are effects of some common cause
- 45. In the question given below, there are two statements followed by two conclusions numbered I and II. You have to take the two given statements to be true even if they seem to be at variance from commonly known facts and decide which of the given conclusion(s), logically follow(s) from the two given statements disregarding commonly known facts.

#### **Statements**

- I. Some schools are colleges.
- II. Some colleges are universities.
- III. All universities are institutes.
- IV. All institutes are classes.

#### **Conclusions**

- I. Some colleges are classes.
- II. All universities are classes.

- a. Only conclusion I follows
- c. Both conclusion I and II follows

- b. Only conclusion II follows
- d. Neither conclusion I nor II follows
- 46. Study the following information carefully to answer the question:
  - I. 'A \$ B' means 'A is the mother of B'.
  - II. 'A # B' means 'A is the father of B'.
  - III. 'A @ B' means 'A is the husband of B'.
  - IV. 'A % B' means 'A is the daughter of B'.

Which of the following expressions indicates 'R is the sister of H'?

a. R\$D@F#H

b. H%D@F\$R

c. R%D@F#H

- d. H\$D@F#R
- 47. Study the information given below carefully and answer the question that follows:

P, Q, R, S, T, U, V, W and X are nine horses. R is 2 km East of Q. P is 1 km North of Q and W is 2 km South of P. V is 1 km West of W while S is 3 km East of V and U is 2 km North of V, X is situated just in the middle of Q and R while T is just in the middle of W and S.

What is the shortest distance between P and U and what is the direction of P with respect to V?

a. 4 km, South-West

b. 2 km, North

c. 5 km, South-West

- d. 1 km, North-East
- 48. Select the option figure which satisfies the same conditions of the placement of dots as in the question figure:













b.



- 49. A word and number arrangement machine when given an input line of words and numbers, rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement.
  - Input: 36 bread 8 same 92 shaving 82 seldom 54 den
  - Step I: 8 36 bread same 92 shaving 82 seldom 54 den
  - Step II: 8 shaving 36 bread same 92 82 seldom 54 den
  - Step III: 8 shaving 36 seldom bread same 92 82 54 den
  - Step IV: 8 shaving 36 seldom 54 bread same 92 82 den
  - Step V: 8 shaving 36 seldom 54 bread 82 same 92 den

Step V is the last step. As per rules followed in the above steps, answer the question that follows for the given input.

Input: 24 against 16 ascending 80 best bin 64 candy 46

Which of the following represents the position of 'against' in Step III?

a. Fourth from the left

b. Sixth from the left

c. Fourth from the right

- d. Second from the right
- 50. Answer the question based on the following arrangement:

8 C M @ N £ T 2 Y 6 S  $\alpha$  Q \$ 7  $\leftrightarrow$  W # Z 3 U E % A 4

Three of the following four are alike in a certain way with respect to their position in the above arrangement. Which is the one that is different from the rest?

a. #3E

b. Q7W

c. TMN

d. £26

## **Answer Key**

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