# BK BIRLA CENTRE FOR EDUCATION

**SARALA BIRLA GROUP OF SCHOOLS**
**SENIOR SECONDARY CO-ED DAY CUM BOYS' RESIDENTIAL SCHO**
**MID TERM EXAMINATION 2024-25**
**MATHEMATICS ANSWER KEYS (041)**

CLASS:VII
Date: 21.09.24
Name:

Duration: 3 hrs.
MAX.MARKS:80
Exam RNo:

***General Instructions:***
***1. This Question Paper has 5 Sections A-E.***
***2. Section A has 20 MCQs carrying 1 mark each***
***3. Section B has 5 questions carrying 02 marks each.***
***4. Section C has 6 questions carrying 03 marks each.***
***5. Section D has 4 questions carrying 05 marks each.***
***6. Section E has 3 case based integrated units of assessment (04 marks each) .***
***7. All Questions are compulsory. However, an internal choice in 2 Qs of 5 marks, 2 Qs of 3 marks and 2 Questions of 2 marks has been provided.***

## SECTION-A $(20 \times 1 = 20)$

**Choose the correct answer. (1 Mark for each correct answer)**

1) $10 \div (-5) =$
a) 2 b) 5 c) -5 **d) -2**

2) Which of the following is true?
a) (-8) + (-4) > (-8) – (-4) b) **(-8) + (-4) < (-8) – (-4)**
c) (-8) + (-4) = (-8) – (-4) d) None of these

3) The mean of first five natural number is
a) 4 b**) 3** c) 0 d) 2

4) The sum of measures of two complementary angles is
a) $180^0$ **b) $90^0$** c) $45^0$ d) none of these

5) The median of the distribution 2, 3, 4, 7, 5, 1, 6 is
a) 1 b) 2 c) 3 **d) 4**

6) a × (– b) = (– b) × a
a) **Commutative property** b) associative property
c) distributive property d) closure property

7) $\frac{3}{4}$ of 12 is
a**) 9** b) 16 c) 18 d) 32

8) The product of 0.03 × 0.9 is:
a) 2.7 b) 0.27 c) **0.027** d) 0.0027

9) 2.4 × 1000 = _____.
a) 24 b) 240 c) **2400** d) 2.004

10) The mode of the data 13, 16, 12, 14, 19, 12, 14, 13, 14 is
a) 12 b) 13 **c) 14** d) 16

11) Write the Simple equation of the statement — The sum of three times $x$ and 10 is 13.

a) $\mathbf{3x + 10 = 13}$ b) $3x - 10 = 13$ c) $3x + 13 = 10$ d) None of these

12) The solution of the equation $x + 3 = 0$ is
a) 3 **b) – 3** c) 0 d) 1

13) How many rational numbers are there between two rational numbers?
a) 1 b) 0 **c) Infinite** d) 100

14) 1 subtracted from one third of a number gives 1. The number is
a) 3 **b) 6** c) 9 d) 2

15) Which of the following pair of angles are supplementary?
a) 48°, 42° b) 60°, 60° c) 179°, 2° **d) 75°, 105°**

16) If the complement of an angle is 79°, then the angle will be of
a) 1° b) **11°** c) 79° d) 101°

17) A rational number is defined as a number that can be expressed in the form $\frac{p}{q}$, where p and q are integers and
a) $q = 0$ b) q= 1 c) q≠ 1 **d) $q \neq 0$**

18) Which of the following rational numbers is negative?
a) $-\left(-\frac{3}{7}\right)$ b) $\frac{-5}{-8}$ c) $\frac{9}{8}$ **d) $\frac{-3}{7}$**

19) Assertion: Every integer is a rational number.
Reason: An integer is a number with no decimal or fractional part, from the set of negative and positive numbers, including zero.
**a) Both Assertion and Reason are correct and Reason is the correct explanation for Assertion**
b) Both Assertion and Reason are correct and Reason is not the correct explanation for Assertion.
c) Assertion is true but the reason is false.
d) Both assertion and reason are false.

20) Assertion: Sum of two rational numbers is rational number.
Reason: $\frac{4}{5} + \frac{3}{5} = \frac{7}{5}$
**a) Both Assertion and Reason are correct and Reason is the correct explanation for Assertion.**
b) Both Assertion and Reason are correct and Reason is not the correct explanation for Assertion.
c) Assertion is true but the reason is false.
d) Both assertion and reason are false.

**SECTION-B** **(5 × 2 = 10)**

21) Length = 6.3 cm
Breadth = 3.7 cm
Area of rectangle = length × breadth _____ (1)
= 6.3 × 3.7 = 23.31 $cm^2$
Hence, the required area =23.31 $cm^2$ _____ (1)

OR

Distance covered by the car using 1 litre of petrol = 16 km

By converting a mixed number into improper fractions = 11/4 litres _____ (1)

Distance covered by using $2\frac{3}{4}$ litres of petrol = 16 km × 11/4 = 44 km _____ (1)

Thus, 44 km distance will be covered.

22) Arranging the given data in ascending order,

5, 9, 10, 12, 15, 16, 19, 20, 20, 20, 20, 23, 24, 25,25

Mode is the observation occurred the highest number of times.

Therefore, Mode =20 _____(1)

Median is the middle observation =20 _____(1)

Yes, Mode and Median are same of given observation

23) (a) .$6y-6=60$ _____ (1)

(b) $\frac{b}{5}=6$ _____ (1)

24) Let the angle be x.

Supplement of this angle is also x.

The sum of the measures of a supplementary angle pair is 180º.

∴ x + x = 180° _____ (1)

2x = 180°

x = 90° _____ (1)

25)

a) $-\frac{60}{72}$ $=\frac{-5}{6}$ ____ (1)

b) $\frac{75}{-45}$ $=\frac{5}{-3}$ _____ (1)

OR

$-2\frac{1}{3}+4\frac{3}{5}$

$\frac{-7}{3}+\frac{23}{5}$ ____(1)

LCM of 3 & 5 is 15

$\frac{-35}{15}+\frac{69}{15}=\frac{-35+69}{15}=\frac{34}{16}=2\frac{4}{15}$ ____(1)

SECTION-C $(6\times 3=18)$

26) a)If 40 is the pass mark, so,4 students have failed. _____ (1)

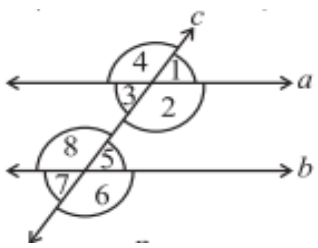
b) 4 students scored 90 marks and above. _____ (1)

c)There are 10 merits students. _____ (1)

27) (a) ∠1 and ∠5, ∠2 and ∠6, ∠3 and ∠7, ∠4 and ∠8 _____ (1)

(b) ∠2 and ∠8, ∠3 and ∠5 _____ (1)

(c) ∠2 and ∠5, ∠3 and ∠8 _____ (1)



28) List five rational numbers between $-4\ and\ -3$.

$-4 \times \frac{6}{6}$ and $-3 \times \frac{6}{6}$ _____ (1)

$\frac{-24}{6}\ and \frac{-18}{6}$ _____ (1)

five rational numbers between $-4\ and\ -3$ are

$\frac{-19}{6}, \frac{-20}{6}, \frac{-21}{6}, , \frac{-22}{6}, \frac{-23}{6}$ _____ (1)

29) Solve: a) $7\frac{1}{2} \times \frac{2}{3}$

$= \frac{15}{2} \times \frac{2}{3}$

$= 5$ _____ $(1\frac{1}{2})$

b) $\frac{16}{15} \div \frac{24}{25}$

$= \frac{16}{15} \times \frac{25}{24}$

$= \frac{10}{9} = 1\frac{1}{9}$ _____ $(1\frac{1}{2})$

OR

a)34.2÷10 = =3.42 b)268.72÷100 =2.6872 c) 18.9÷1000 = 0.0189 (1 Mark each)

30) Verify the following: $18 \times [7 + (-3)] = [18 \times 7] + [18 \times (-3)]$

L.H.S. $= 18 \times [7 + (-3)] = 18 \times [7 - 3] = 18 \times 4 = 72$ _____ (1)

R.H.S. $= [18 \times 7] + [18 \times (-3)] = 126 + (-54) = 72$ _____ (1)

18 x [7 + (-3)] = [18 x 7] + [18 x (-3)] _____ (1)

OR

Evaluate:

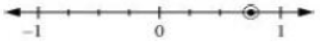
a) (-8) × (-3) × (2) x (-1)
=24 × (-2)
= (-48) _____ (1)

b) (-61) ÷ [ (-60) + (-1)]
(-61) ÷ (-61) = 1 _____ (1)

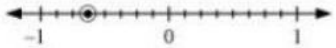
c) 32 × 0 × (-29) = 0 _____ (1)

31) $(1\frac{1}{2}\ mark\ each)$

a) $\frac{3}{4}$ can be represented as

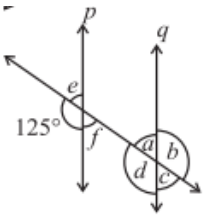



b) $\frac{-5}{8}$ can be represented as



SECTION-D $(5 \times 4 = 20)$

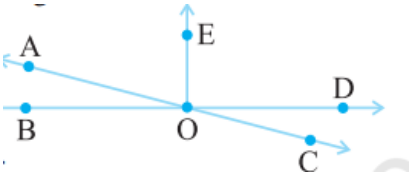
32) [1 Mark for each correct answer ]




∠d = 125° (Corresponding angles)
∠e = 180° − 125° = 55° (Linear pair)
∠f = ∠e = 55° (Vertically opposite angles)
∠c = ∠f = 55° (Corresponding angles)
∠a = ∠e = 55° (Corresponding angles)
∠b = ∠d = 125° (Vertically opposite angles)

OR

(1 Mark for each correct answer )

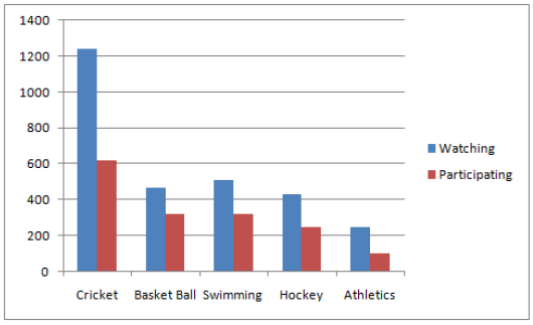



(a) ∠AOD, ∠BOC
(b) ∠EOA, ∠AOB
(c) ∠EOB, ∠EOD
(d) ∠EOA, ∠EOC
(e) ∠AOB and ∠AOE, ∠AOE and ∠EOD, ∠EOD and ∠COD

33) a)3 marks for graph

b) Cricket sport is most popular _____(1)

c) Watching is more preferred in sports. _____(1)




34)

(a) Marks given for 1 correct answer = 5
Marks given for 4 correct answers = 5 × 4 = 20 _____(1)
Marks given for 1 wrong answer = −2
Marks given for 6 wrong answers = −2 × 6 = −12 _____(1)
Score obtained by Mohan = 20 − 12 = 8 _____(1/2)

(b) Marks given for 5 correct answers = 5 × 5 = 25 _____(1)
Marks given for 5 wrong answers = −2 × 5 = −10 _____(1)
Score obtained by Reshma = 25 − 10 = 15 _____(1/2)

35) a) $3n - 2 = 46$
$3n = 46 + 2$
$n = \frac{48}{3} = 16$ __ (2)

b) $5m + 7 = 17$
$5m = 17 - 7$
$m = \frac{10}{5} = 2$ __ (2)

c) $3q = 42$
$q = \frac{42}{3}$
$q = 14$ __ (1)

OR

Let the base angle of the triangle be y _____ (1)

$y + y + 40° = 180°$ _____ (1)

$2y = 180° - 40°$ _____ (1)

$y = \frac{140°}{2} = 70°$ _____ (2)

SECTION-E $(3 \times 4 = 12)$

36) a ) Lahulspiti : −8°C Srinagar : −2°C Shimla : 5°C Ooty : 14°C Bangalore : 22°C____(1)

(b) Temperature at the hottest place, i.e., Bangalore = 22°C
Temperature at the coldest place, i.e., Lahulspiti = −8°C
Temperature difference = 22°C − (−8°C)= 30°C _____(1)

c)Temperature at Srinagar = −2°C
Temperature at Shimla = 5°C
Temperature of Srinagar and Shimla taken together = −2°C + 5°C= 3°C
3°C < 5°C
Yes, the temperature of Srinagar and Shimla taken together is less than the temperature of Shimla. However, 3°C < 5C. _____(1)
Hence, the temperature of Srinagar and Shimla taken together is not less than the temperature of Srinagar. _____(1)

37) (i) What is the age of her mother?
a)35 b) 46 c) 30 **d) 40** _____(1)

(ii) What is the age of her mother after 5 years from now?
a) 42 b) 51 **c) 45** d) 35 _____(1)

(ii) If her father is 3 years older to her mother, then what is difference in her age and her father's age?
a)28 b) 39 c) 30 **d) 31** _____(2)

38) 1) What was the total bill that Miraya paid at the bakery?
a) 24 Rs 7.25 **b) Rs 270.75** c) Rs 255.75 d) Rs 282.25 _____(2)

2) When Miraya gave the 500 rupee note to the bakery owner, what amount did she get in return after paying the bakery bill?
a) Rs 217.75 b) 2 Rs 44.25 **c) Rs 229.25** d) Rs 252.75 _____(1)

3) On her way back, Miraya bought 7 ice creams, each costing Rs 16.75. How much did she spend on the Ice- creams?
**a) Rs 112.25** b) Rs 117.25 c) 118.25 d) Rs 115.50 _____(1)

**********THE END**********