# BK BIRLA CENTRE FOR EDUCATION

**SARALA BIRLA GROUP OF SCHOOLS**
**SENIOR SECONDARYCO-ED DAY CUM BOYS' RESIDENTIAL SCHOOL**
**PERIODIC TEST-2 (2024-25)**
**MATHEMATICS (041) Answer keys**

Class : VII Duration: 1 Hrs.
Date : 05.12.2024 Max. Marks: 25
Admission No.: Roll No.:

*General Instructions:*
*Questions 1 to 5 are 1 mark each.*
*Questions 6 to 9 are of 2 marks each.*
*Questions 10 and 13 are of 3 marks each.*

## SECTION-A (5 × 1 = 5)

**Choose the correct answer.**

1) The value of $(-1)^{75}$ is

a) 0 b) 1 **c) − 1** d) None of these

2) The exponential form of 125 is

a) **$5^3$** b) $5^4$ c) $5^2$ d) None of these

3) If $2^3 \times 2^4 = 2^X$ Then X =?

a) 3 **b) 7** c) 1 d) 4

4) The area of parallelogram is

a) height × height **b) base × height** c) base + height d) base × base

5) Find the area of a triangle with a base of 20 cm and a height of 30 cm.

a) **300** b) 600 c)100 d) 400

## SECTION- B (4 × 2 = 8)

6) Simplify: $8^7 \div 8^5 = 8^{7-5} = 8^2 = 64$ _____(2)

7) Express the number appearing in the following statements in standard form.

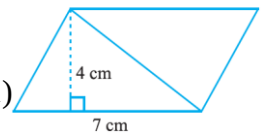
(a) The distance between Earth and Moon is 345,000,000 m.

$=3.45 \times 10^8$ _____(1)

b) Speed of light in vacuum is 300,000,000 m/s. $=3\times10^8$ _____(1)

8) Area of the parallelogram = Base × Height _____(1)

$= 7 \times 4 = 28\ cm^2$ _____(1)



9) Find the area of the circles of radius28 cm. (Take $\pi = \frac{22}{7}$)

Given, the radius of the circle = 28cm

Area of the circle = $\pi r^2$ _____(1/2)

$= 22/7 \times 28^2$ _____(1/2)

$= 22/7 \times 784$

$= 22 \times 112$

$= 2464 cm^2$ _____(1)

**SECTION- C** $(4 \times 3 = 12)$

10) . Simplify and express each of the following in exponential form:

$\frac{3 \times 7^2 \times 11^8}{21 \times 11^3}$

Factors of $21 = 7 \times 3$

$= (3 \times 7^2 \times 11^8)/ (7 \times 3 \times 11^3)$ _____(1)

$= 3^{1-1} \times 7^{2-1} \times 11^{8-3}$

$= 3^0 \times 7 \times 11^5$ _____(1)

$= 1 \times 7 \times 11^5$

$= 7 \times 11^5$ _____(1)

11) Using laws of exponents, simplify and write the answer in exponential form:

a) $(2^{20} \div 2^{15}) \times 2^3$

$=(2^{20} \div 2^{15})$

$= (2)^{20-15} = 2^5$ _____(1)

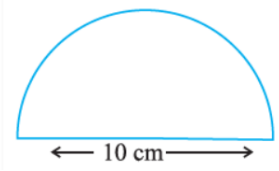
$=2^5 \times 2^3$

$= (2)^{5+3}$

$= 2^8$ _____(1)

b) $(3^4)^3 = 3^{4 \times 3} = 3^{12}$ _____(1)

12) Diameter of semi-circle = 10 cm




We know that radius (r) = d/2

$= 10/2 = 5$ cm

Circumference of the semi-circle = $\pi r + 2r$ _____(1)

$= 3.14(5) + 2(5)$ _____(1)

$= 5 [3.14+ 2] = 5 [5.14]$

Therefore, the perimeter of the semicircle = 25.7 cm _____(1)

13) We know that radius (r) = d/2

Circumference of the circle = $2\pi r$

$= 2 \times (22/7) \times 10.5$

$= 462/7$

= 66 m _____(1)

So, the length of rope required = $2 \times 66 = 132$ m _____(1)

Cost of 1 m rope = ₹ 4 [given]

Cost of 132 m rope = ₹ $4 \times 132$

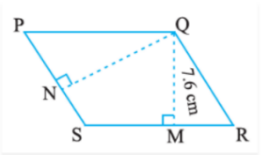
= ₹ 528

**OR**

(a) The area of the parallelogram PQRS,SR = 12 cm, QM = 7.6 cm

We know that,

Area of the parallelogram = Base × Height _____(1/2)




= SR × QM

$= 12 \times 7.6 = 91.2$ $cm^2$ _____(1)

(b) Area of the parallelogram = Base × Height _____(1/2)

91.2 = PS × QN

91.2 = 8 × QN

QN = 91.2/8 = 11.4 cm _____(1)

**********The End **********