PONY

سلسلة كتب الأستاذ

Math

February Revision

1st preparatory

Second Term

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Model 1

Q1) Choose the correct answer from those given:

1. -2^4 = ...

a -8 b 8 c 16 d -16

2. $a^{-3} \times a$ = ...

a a^{-2} b a^{-3} c a^{3} d a^{2}

3. $\frac{1}{4}$ milliard ..... (in scientific notation)

a 2.5×10^{6} b 2.5×10^{7} c 2.5×10^{8} d 2.5×10^{9}

4. $\sqrt{a} = \sqrt[3]{125}$, then a= .....

a 5 b ± 5 c 25 d ± 25

5. The solution set of equation in Z: $x^3 + 26 = -1$

a -9 b 9 c -3 d 3

Q2) Answer the following questions:

1. If $x = 2, y = 3$, then find the value of $x^y + y^x$

.....

.....

2. Find the value of: $\frac{(3)^4 \times (-3)^2 \times 3^2}{(-3)^2 \times (-3)^4}$ "in the simplest form"

.....

.....

3. Find the value in the scientific notation: $(9.8 \times 10^5) - (4.9 \times 10^4)$

.....

.....

4. Find the value of: $(\frac{-3}{5}) \times \sqrt{\frac{4}{9}} \times \sqrt[3]{\frac{1}{8}}$ "in the simplest form"

.....

.....

5. Find the solution set of the following inequality in Z : $3(2x - 1) > 9$

.....

Model 2

Q1) Choose the correct answer from those given:

1. $(-2)^3$ = ...

a -6 b 6 c 8 d -8

2. $a^3 \times a^{-1}$ = ...

a a^{-2} b a^{-3} c a^3 d a^2

3. 0.0002 = 2 × .....

a 10^4 b 10^{-4} c 10^3 d 10^{-3}

4. $\sqrt{10^2 - 6^2}$ = ...

a 16 b ±4 c 8 d 4

5. $\sqrt[3]{\sqrt{64}}$

a 16 b 8 c 4 d 2

Q2) Answer the following questions:

1. If a = - 2, b = 3, then find the value of $a^3 + b^2$

2. Find the value of: $\frac{(-4)^4 \times (-4)^3 \times 4^2}{(-4)^6 \times (-4)^4}$ "in the simplest form"

3. Find the value in the scientific notation: $(3.5 \times 10^6) \times (8 \times 10^5)$

4. Find the value of: $\left(\frac{-3}{2}\right)^2 + \sqrt{\frac{25}{4}} + \sqrt{\frac{125}{64}}$ "in the simplest form"

5. Find the solution set of the following inequality in Z : $2(x + 5) - 3 < 9$

Model 3

Q1) Choose the correct answer from those given:

1. $(-2)^6 \times 2^2 \div 2^5 =$ .....

a 2^7 b -2^3 c 2^3 d -8^7

2. $3^3 + 3^3 + 3^3 =$ .....

a 3^4 b 3^6 c 3^9 d 9^3

3. Which of the following is the smallest number?

a 17.4×10^4 b 7×10^4 c 2.5×10^5 d 0.57×10^5

4. If $x = 2, y = -1$, then $y^x \times x^y =$ .....

a 2 b - 2 c $\frac{1}{2}$ d $\frac{-1}{2}$

5. If $x^3 = -343$, Then the value of $x =$ .....

a - 49 b -7 c 49 c ± 7

Q2) Answer the following questions:

1. Without finding the values, find the median of the numbers:

$$(-2)^3 , \sqrt[3]{-27} , \sqrt{64} , 3^2 , \frac{1}{3^{-3}}$$

.....

2. Find the value of: $\frac{(-y)^4 \times (y)^{-3} \times y^2}{(y)^{-2} \times (-y)^4}$ "in the simplest form"

.....

.....

3. Find the value in the scientific notation: $(3.5 \times 10^6) + (8 \times 10^5)$

.....

4. Find the value of: $(\frac{3}{4})^2 + \sqrt{\frac{64}{81}} + \sqrt{\frac{27}{8}}$ "in the simplest form"

.....

.....

5. Find the solution set of the following inequality in Z : $(x + 5) - 1 \leq 9$

.....

Model 4

Q1) Choose the correct answer from those given:

1. $28 - 10 \times 2 + 2^3 =$ .....

a 80 b 16 c 60 d 24

2. $3^3 + 3^3 + 3^3 =$ .....

a 3^4 b 3^6 c 3^9 d 9^3

3. Which of the following is the largest number?

a 17.4×10^4 b 7×10^4 c 2.5×10^5 d 0.57×10^5

4. If $x = 2, y = -1$, then $y^x - x^y =$ .....

a 2 b - 2 c $\frac{1}{2}$ d $\frac{-1}{2}$

5. If $x^2 = 49$, then the value of $x =$ .....

a - 49 b -7 c 49 d ± 7

Q2) Answer the following questions:

1. Arrange the following in ascending order:

$$(-2)^4 , \sqrt[3]{-27} , \sqrt[3]{64} , 4^2 , \frac{1}{2^{-3}}$$

2. Find the value of: $\frac{(-a)^6 \times (a)^{-3} \times a^2}{(a)^{-2} \times (-a)^8}$ "in the simplest form"

3. Find the value in the scientific notation: $(2.4 \times 10^5) - (7 \times 10^4)$

4. Find the value of: $(\frac{3}{4})^2 + \sqrt{\frac{9}{4}} + \sqrt{\frac{-27}{8}}$ "in the simplest form"

5. Find the solution set of the following inequality in Z : $1 - (x + 5) > - 3$

Model 5

Q1) Choose the correct answer from those given:

1. If $4^6 \div 4^x = 1$, then x = ...

a - 6 b 2 c 3 d 6

2. The quarter of the number 4^{12} = ...

a 1 b 4^3 c 4^4 d 4^{11}

3. $0.0042 = a \times 10^{-5}$, then a = ...

a 4.2 b 42 c 420 d 4200

4. The Solution set of the inequality: $-2x \geq -6$ in N is .....

a {-3,-2,-1.0, 1,.....} b {3,2,1.0}

c {3,2,1.0, -1 ,.....} d ∅

5. $\sqrt[3]{5^2 + 10^2}$ = ...

a 25 b 15 c 10 d 5

Q2) Answer the following questions:

1. If a = 8, b = 5, Find the value of:

.....

2. The surface area of the globe is about 510,000,000 km^2, write it in scientific notation.

.....

3. Find the solution set of the following equation in N: $3x^2 + 4 = 7$

.....

4. A piece of clay whose volume is 512 cubed centimeter. Formed in the form of a cube, Find its lateral area.

.....

.....

5. Find the solution set of the following inequality in Z: $2 - 3x < 17$

.....

Model Answers

Model 1

1 1. d 2. a 3. c 4. c 5. c

2 1. $2^3 + 3^2 = 8 + 9 = 17$

2. $\frac{3^4 \times 3^2 \times 3^2}{(3)^2 \times (3)^4} = \frac{3^8}{3^6} = 3^2$

3. $98 \times 10^4 - 4.9 \times 10^4 = 93.1 \times 10^4 = 9.3 \times 10^5$

4. $\frac{-3}{5} \times \frac{2}{3} \times \frac{1}{2} = \frac{-1}{5}$

5. $2x - 1 > 3$

$2x > 4 \quad \therefore x > 2$ S.S = { 3 , 4 , 5 , ... }

Model 2

1 1. d 2. d 3. b 4. c 5. d

2 1. $(-2)^3 + 3^2 = -8 + 9 = 1$

2. $\frac{(-4)^{11}}{(-4)^{10}} = -4$

3. $28 \times 10^{11} = 2.8 \times 10^{12}$

4. $\frac{9}{4} + \frac{5}{2} + \frac{5}{4} = 6$

5. $2x + 10 < 12$

$2x < 2 \quad \therefore x < 1$

S.S = { 0 , -1 , -2 , ... }

Model 3

1 1. c 2. a 3. d 4. c 5. b

2 1. The order = $(-2)^3$, $\sqrt[3]{-27}$, $\sqrt{64}$, 3^2 , $\frac{1}{3^{-3}}$

The median = $\sqrt{64}$

2. $\frac{y^3}{y^2} = y$

3. $35 \times 10^5 + 8 \times 10^5$

$= 43 \times 10^5 = 4.3 \times 10^6$

4. $\frac{9}{10} + \frac{8}{9} + \frac{3}{3} = \frac{1}{2} + \frac{3}{2} = 2$

5. $x + 4 \leq 9 \quad \therefore x \leq 5$

S.S = { 5 , 4 , 3 , 2 , ... }

Model 4

1 1. b 2. a 3. c 4. c 5. d

2 1. The order = $(-4)^2$, $\sqrt[3]{-27}$, $\sqrt[3]{64}$, $\frac{1}{2^{-3}}$, $(-2)^4$

2. $\frac{a^5}{a^6} = a^{-1} = \frac{1}{a}$

3. 1.7×10^5

4. $1 + \frac{3}{2} + \frac{3}{2} = 4$

5. $-x - 5 > -4 \quad -x > 1$

$\therefore x < -1$

S.S = { -2 , -3 , -4 , -5 , ... }

Model 5

1 1. d 2. d 3. c 4. b 5. d

2 1. $\sqrt{24 + 25} = \sqrt{49} = 7$

2. 5.1×10^8

3. $3x^2 = 3 \quad x^2 = 1$

$\therefore x = \pm 1$ S.S = {1}

4. Side length $\sqrt[3]{512} = 8$ cm

L.A = $4S^2 = 4 \times (8)^2 = 256$ cm^2

5. $-3x < 15 \quad x > -5$

S.S = { -4 , -3 , -2 , -1 , ... }