

## SSC CPO Exam Paper - 2017 "held on 03 July 2017" Shift-1

### (Quantitative Aptitude)

**QID : 101** - If  $1/N = (\sqrt{6} + \sqrt{5})/(\sqrt{6} - \sqrt{5})$ , then what is the value of N?

**Options:**

- 1)  $6 - \sqrt{30}$
- 2)  $6 + \sqrt{30}$
- 3)  $11 - 2\sqrt{30}$
- 4)  $11 + 2\sqrt{5}$

**Correct Answer:**  $11 - 2\sqrt{30}$

**QID : 102** - What is the value of positive square root of  $69 + 28\sqrt{5}$ ?

**Options:**

- 1)  $7 + 2\sqrt{5}$
- 2)  $7 - 2\sqrt{5}$
- 3)  $2 + 7\sqrt{5}$
- 4)  $2 - 7\sqrt{5}$

**Correct Answer:**  $7 + 2\sqrt{5}$

**QID : 103** -  $3^{11} + 3^{12} + 3^{13} + 3^{14}$  is divisible by \_\_\_\_\_.

**Options:**

- 1) 7
- 2) 8
- 3) 11
- 4) 14

**Correct Answer:** 8

**QID : 104** - A boy added all natural numbers from 1 to 12, however he added one number twice

due to which the sum becomes 80. What is the number which he added twice?

**Options:**

- 1) 3
- 2) 2
- 3) 7
- 4) 8

**Correct Answer: 2**

**QID : 105** - What smallest value must be added to 508, so that the resultant is a perfect square?

**Options:**

- 1) 4
- 2) 9
- 3) 18
- 4) 21

**Correct Answer: 21**

**QID : 106** - Raman is 25% more efficient than Aman. If Aman can complete a piece of work in 25 days, then Raman can complete the same work in how many days?

**Options:**

- 1) 12
- 2) 15
- 3) 16
- 4) 20

**Correct Answer: 20**

**QID : 107** - A and B together can complete a work in 30 day. They started together but after 6 days A left the work and the work is completed by B after 36 more days. A alone can complete the entire work in how many days?

**Options:**

- 1) 45
- 2) 90
- 3) 60
- 4) 120

**Correct Answer: 90**

**QID : 108** - The marked price of an article is 40% more than its cost price. If 10% discount is given, then what is the profit percentage?

**Options:**

- 1) 10
- 2) 20
- 3) 26
- 4) 32

**Correct Answer: 26**

**QID : 109** - What will be the net discount (in percent) after giving three successive discounts of 10%, 20% and 30%?

**Options:**

- 1) 50.4
- 2) 49.6
- 3) 45.3
- 4) 48.4

**Correct Answer:** 49.6

**QID : 110** - The ratio of two numbers is 3 : 5. If both numbers are increased by 8, the ratio becomes 13 : 19. What is the sum of the two numbers?

**Options:**

- 1) 32
- 2) 48
- 3) 40
- 4) 72

**Correct Answer:** 48

**QID : 111** - If  $3A = 5B$ , then what is the value of  $(A + B)/B$ ?

**Options:**

- 1)  $8/3$
- 2)  $8/5$
- 3)  $5/8$
- 4)  $5/3$

**Correct Answer:**  $8/3$

**QID : 112** - What is the average of first 29 even numbers?

**Options:**

- 1) 30
- 2) 31
- 3) 32
- 4) 33

**Correct Answer:** 30

**QID : 113** - The average of 5 consecutive odd numbers is 27. What is the product of the first and the last number?

**Options:**

- 1) 621
- 2) 667
- 3) 713
- 4) 725

**Correct Answer:** 713

**QID : 114** - A man bought 9 pens for a rupee. How many pens should he sell for a rupee to gain 50%?

**Options:**

- 1) 3
- 2) 6

3) 7

4) 8

**Correct Answer: 6**

**QID : 115** - On an article the profit is 210% of the cost price. If the cost price increase by 40% but the selling price remains constant, then approximately what percentage of selling price will be the profit?

**Options:**

1) 55

2) 62

3) 74

4) 85

**Correct Answer: 55**

**QID : 116** - If the price of apple increases from Rs 80/kg to Rs 100/kg, then by what percentage a person should decrease the consumption of apple so that his expenditure remains same?

**Options:**

1) 25

2) 22

3) 20

4) 18

**Correct Answer: 20**

**QID : 117** - If 25% of a number is 6, then what is the number which is 50% more than the initial number?

**Options:**

1) 36

2) 24

3) 30

4) 18

**Correct Answer: 36**

**QID : 118** - A boat travels 60 kilometers downstream and 20 kilometers upstream in 4 hours. The same boat travels 40 kilometers downstream and 40 kilometers upstream in 6 hours. What is the speed (in km/hr) of the stream?

**Options:**

1) 24

2) 16

3) 18

4) 20

**Correct Answer: 16**

**QID : 119** - 50 trees are standing in a line such that distance between any two consecutive trees is same. A car takes 18 seconds to travel from 13th tree to 34th tree. How much time (in seconds) will it take to reach from 1st tree to 50th tree?

**Options:**

- 1) 42
- 2) 42.85
- 3) 45
- 4) 49

**Correct Answer:** 42

**QID : 120** - What will be the amount on Rs 12500 at the rate of 20% per annum compounded yearly for 3 years?

**Options:**

- 1) 21080
- 2) 21560
- 3) 20600
- 4) 21600

**Correct Answer:** 21600

**QID : 121** - A certain sum becomes 7 times in 8 years, at simple interest, then in how many years it will become 19 times?

**Options:**

- 1) 15
- 2) 18
- 3) 28
- 4) 24

**Correct Answer:** 24

**QID : 122** -

The table given below shows the runs scored by 5 players in four matches.

नीचे दी गई तालिका में 5 खिलाड़ियों के द्वारा चार मैचों में बनाए गए रनों को दर्शाया गया है।

Player खिलाड़ी	Match / मैच			
	I	II	III	IV
A	70	105	55	135
B	40	35	95	72
C	60	68	75	85
D	95	45	55	60
E	105	110	125	122

What is the difference between total runs scored by A and B in four matches?

**Options:**

- 1) 111
- 2) 123
- 3) 98
- 4) 135

**Correct Answer:** 123

**QID : 123 -**

The table given below shows the runs scored by 5 players in four matches.

नीचे दी गई तालिका में 5 खिलाड़ियों के द्वारा चार मैचों में बनाए गए रनों को दर्शाया गया है।

Player खिलाड़ी	Match / मैच			
	I	II	III	IV
A	70	105	55	135
B	40	35	95	72
C	60	68	75	85
D	95	45	55	60
E	105	110	125	122

Runs scored by C in match II is how much percent more than the runs scored by C in match I?

**Options:**

- 1) 11.76
- 2) 16.66
- 3) 17.12
- 4) 13.33

**Correct Answer:** 13.33

**QID : 124 -**

The table given below shows the runs scored by 5 players in four matches.

नीचे दी गई तालिका में 5 खिलाड़ियों के द्वारा चार मैचों में बनाए गए रनों को दर्शाया गया है।

Player खिलाड़ी	Match / मैच			
	I	II	III	IV
A	70	105	55	135
B	40	35	95	72
C	60	68	75	85
D	95	45	55	60
E	105	110	125	122

Runs scored by A in match II is what percent of the total runs scored by these five players in match II?

**Options:**

- 1) 71.07
- 2) 35.14
- 3) 28.92
- 4) 55.13

**Correct Answer:** 28.92

**QID :** 125 -

The table given below shows the runs scored by 5 players in four matches.

नीचे दी गई तालिका में 5 खिलाड़ियों के द्वारा चार मैचों में बनाए गए रनों को दर्शाया गया है।

Player खिलाड़ी	Match / मैच			
	I	II	III	IV
A	70	105	55	135
B	40	35	95	72
C	60	68	75	85
D	95	45	55	60
E	105	110	125	122

What is the correct order of averages of the given players in the 4 matches?

**Options:**

- 1)  $E > A > C > D > B$
- 2)  $E > A > D > C > B$
- 3)  $A > E > C > D > B$
- 4)  $A > E > B > C > D$

**Correct Answer:**  $E > A > C > D > B$

**QID : 126** - A solid metallic sphere of radius 21 cm is melted and recast into a cone with diameter of the base as 21 cm. What is the height (in cm) of the cone?

**Options:**

- 1) 336
- 2) 112
- 3) 224
- 4) 66

**Correct Answer:** 336

**QID : 127** - The radius of a wheel is 3.5 cm. What is the distance (in cm) travelled by the wheel in 20 revolutions?

**Options:**

- 1) 220
- 2) 440
- 3) 880
- 4) 1320

**Correct Answer:** 440



**QID : 128** - If the perimeter of a square is 44 cm, then what is the diagonal (in cm) of the square?

**Options:**

- 1)  $11\sqrt{2}$
- 2)  $2\sqrt{11}$
- 3) 11
- 4)  $44\sqrt{2}$

**Correct Answer:**  $11\sqrt{2}$

**QID : 129** - What is the curved surface area (in  $\text{cm}^2$ ) of a cylinder having radius of base as 14 cm and height as 10 cm?

**Options:**

- 1) 440
- 2) 880
- 3) 220
- 4) 1320

**Correct Answer:** 880

**QID : 130** - Three circles of radius 63 cm are placed in such a way that each circle touches the other two. What is the area of the portion enclosed by the three circles?

**Options:**

- 1)  $7938\sqrt{3} - 4158$
- 2)  $3969\sqrt{3} - 4158$
- 3)  $7938\sqrt{3} - 6237$
- 4)  $3969\sqrt{3} - 6237$

**Correct Answer:**  $3969\sqrt{3} - 6237$

**QID : 131** - If  $(x/y)^{5a-3} = (y/x)^{17-3a}$ , then what is the value of a?

**Options:**

- 1) -7
- 2) -5
- 3) 0
- 4) 3

**Correct Answer:** -7

**QID : 132-**

What is the value of  $\left(\frac{x^2 - x - 6}{x^2 + x - 12}\right) \div \left(\frac{x^2 + 5x + 6}{x^2 + 7x + 12}\right)$ ?

$\left(\frac{x^2 - x - 6}{x^2 + x - 12}\right) \div \left(\frac{x^2 + 5x + 6}{x^2 + 7x + 12}\right)$  का मान क्या है?

**Options:**

- 1) 1
- 2)  $(x - 3)/(x + 3)$
- 3)  $(x + 4)/(x - 3)$
- 4)  $(x - 3)(x + 4)$

Correct Answer: 1

**QID : 133 -**

If  $x^2 + \frac{1}{x^2} = \frac{7}{4}$  for  $x > 0$ , then what is the value of

$$x^3 + \frac{1}{x^3}?$$

यदि  $x > 0$  के लिए  $x^2 + \frac{1}{x^2} = \frac{7}{4}$  हो, तो  $x^3 + \frac{1}{x^3}$  का मान

क्या है?

**Options:**

- 1)  $(3\sqrt{3})/5$
- 2)  $(3\sqrt{15})/5$
- 3)  $(3\sqrt{15})/8$
- 4)  $(3\sqrt{5})/8$

Correct Answer:  $(3\sqrt{15})/8$

**QID : 134 -**

If  $x^2 - 8x + 1 = 0$ , then what is the value of  $x^2 + \frac{1}{x^2}$ ?

यदि  $x^2 - 8x + 1 = 0$  हो, तो  $x^2 + \frac{1}{x^2}$  का मान क्या है?

**Options:**

1) 18

2) 34

3) 40

4) 62

**Correct Answer:** 62

**QID : 135 -**

What is the simplified value of

$$\left(x^{32} + \frac{1}{x^{32}}\right)\left(x^8 + \frac{1}{x^8}\right)\left(x - \frac{1}{x}\right)\left(x^{16} + \frac{1}{x^{16}}\right)\left(x + \frac{1}{x}\right)\left(x^4 + \frac{1}{x^4}\right)?$$

$$\left(x^{32} + \frac{1}{x^{32}}\right)\left(x^8 + \frac{1}{x^8}\right)\left(x - \frac{1}{x}\right)\left(x^{16} + \frac{1}{x^{16}}\right)\left(x + \frac{1}{x}\right)\left(x^4 + \frac{1}{x^4}\right)$$

का सरलीकृत मान क्या है?

Options:

1)

$$\left( x^{64} + \frac{1}{x^{64}} \right)$$

2)

$$\frac{\left( x^{64} - \frac{1}{x^{64}} \right)}{\left( x^2 + \frac{1}{x^2} \right)}$$

3)

$$\frac{\left( x^{64} - \frac{1}{x^{64}} \right)}{\left( x + \frac{1}{x} \right)}$$

4)

$$\frac{\left( x^{32} - \frac{1}{x^{32}} \right)}{\left( x + \frac{1}{x} \right)}$$

Correct Answer:

$$\frac{\left( x^{64} - \frac{1}{x^{64}} \right)}{\left( x^2 + \frac{1}{x^2} \right)}$$

**QID : 136** - If P is the circum-center in  $\Delta ABC$ ,  $\angle BPC = 30^\circ$ , then what is the value (in degrees) of  $\angle BAC$ ?

Options:

1) 30

2) 60

3) 75

4) 105

Correct Answer: [ No Correct Answer ]

**QID : 137** - In  $\Delta PQR$ ,  $\angle PQR = 90^\circ$ ,  $PQ = 5$  cm and  $QR = 12$ . What is the radius (in cm) of the circum-circle of  $\Delta PQR$ ?

Options:

1) 6.5

2) 7.5

3) 13

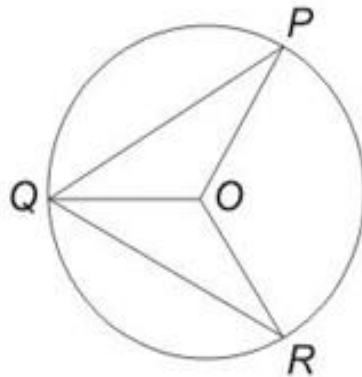
4) 15

Correct Answer: 6.5

**QID : 138 -**

In the given figure,  $O$  is the center of the circle,  $\angle PQO = 30^\circ$  and  $\angle QRO = 45^\circ$ . What is the value (in degrees) of  $\angle POR$ ?

दी गई आकृति में,  $O$  वृत्त का केंद्र है,  $\angle PQO = 30^\circ$  तथा  $\angle QRO = 45^\circ$  है।  $\angle POR$  का मान (डिग्री में) क्या है?



**Options:**

1) 150

2) 110

3) 160

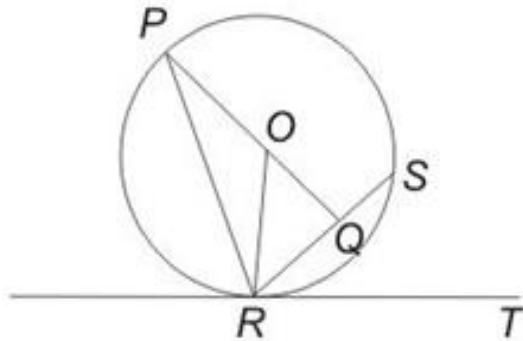
4) 130

**Correct Answer: 150**

**QID : 139 -**

In the given figure,  $O$  is the centre of the circle,  $OQ$  is perpendicular to  $RS$  and  $\angle SRT = 30^\circ$ . If  $RS = 10\sqrt{2}$ , then what is the value of  $PR^2$ ?

दी गई आकृति में,  $O$  वृत्त का केंद्र है,  $OQ$ ,  $RS$  का लम्ब है तथा  $\angle SRT = 30^\circ$  है। यदि  $RS = 10\sqrt{2}$  है, तो  $PR^2$  का मान क्या होगा?



**Options:**

- 1)  $200(1 + \sqrt{3})$
- 2)  $300(2 + \sqrt{3})$
- 3)  $200(2 + \sqrt{3})$
- 4)  $100(3 + 2\sqrt{3})$

**Correct Answer:**  $200(2 + \sqrt{3})$

**QID : 140** - If  $\Delta ABC$  is right angled at  $B$ ,  $AB = 30$  and  $\angle ACB = 60^\circ$ , then what is the value of  $AC$ ?

**Options:**

- 1) 20
- 2)  $20\sqrt{3}$
- 3) 40
- 4) 60

**Correct Answer:**  $20\sqrt{3}$

**QID : 141** - If  $\sin \theta + \cos \theta = \sqrt{3} \cos(90 - \theta)$ , then what is the value of  $\tan \theta$ ?

**Options:**

- 1)  $\sqrt{3} - 1$
- 2)  $\sqrt{3} + 1$
- 3)  $(\sqrt{3} + 1)/2$
- 4)  $(\sqrt{3} - 1)/2$

**Correct Answer:**  $(\sqrt{3} + 1)/2$

**QID : 142 -**

If  $\tan A = \frac{1}{3}$  and  $\tan B = \frac{2}{5}$ , then what is the value of  $\tan (2A + B)$ ?

यदि  $\tan A = \frac{1}{3}$  तथा  $\tan B = \frac{2}{5}$  है, तो  $\tan (2A + B)$  का मान क्या है?

**Options:**

- 1) 8/15
- 2) 6/13
- 3) 37/115
- 4) 23/14

**Correct Answer:** 23/14

**QID : 143 -** What is the simplified value of  $[(1 + \sec^2 \theta) \tan^2 \theta] + 1$ ?

**Options:**

- 1)  $\cos^2 \theta$
- 2) 1
- 3)  $\sec^2 \theta$
- 4)  $\operatorname{cosec} \theta$

**Correct Answer:**  $\sec^2 \theta$

**QID : 144 -** What is the simplified value of  $[(1 - \cos^2 \theta) \operatorname{cosec}^4 \theta] - \cot^2 \theta$ ?

**Options:**

- 1) -1
- 2) 0
- 3) 1
- 4) 3

**Correct Answer:** 1

**QID : 145 -** If  $\cos (\theta + 31^\circ) = \sin 47^\circ$ , then what is the value of  $\sin 5\theta$ ?

**Options:**

- 1) 1/2
- 2)  $1/\sqrt{2}$
- 3)  $\sqrt{3}/2$
- 4) 0

**Correct Answer:**  $\sqrt{3}/2$

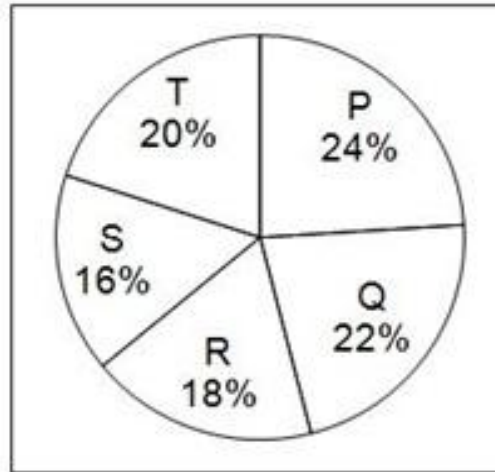
**QID : 146 -**

The following pie chart shows the expenditure (in percentage) of five companies *P*, *Q*, *R*, *S* and *T* in the year 2016.

Total Expenditure = Rs 48 crores

नीचे दिए गए वृत्त चित्र में वर्ष 2016 में *P*, *Q*, *R*, *S* तथा *T* पाँच कंपनियों के खर्चे (प्रतिशत में) को दर्शाया गया है।

कुल व्यय = 48 करोड़ रु.



What was the total expenditure (in Rs crores) of the company *Q*, *R* and *T* together?

**Options:**

- 1) 19.2
- 2) 28.8
- 3) 24.3
- 4) 31.4

**Correct Answer:** 28.8



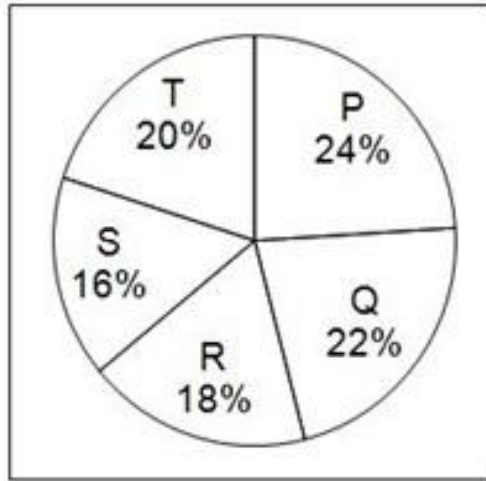
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कुल व्यय = 48 करोड़ रु.



By how much percent expenditure of company Q and R together greater than that of company P?

**Options:**

- 1) 33.33
- 2) 60
- 3) 66.67
- 4) 75

**Correct Answer:** 66.67

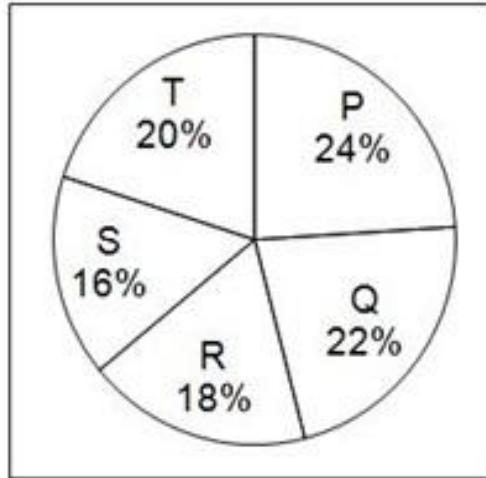
**QID : 148 -**

The following pie chart shows the expenditure (in percentage) of five companies *P*, *Q*, *R*, *S* and *T* in the year 2016.

Total Expenditure = Rs 48 crores

नीचे दिए गए वृत्त चित्र में वर्ष 2016 में *P*, *Q*, *R*, *S* तथा *T* पाँच कंपनियों के खर्च (प्रतिशत में) को दर्शाया गया है।

कुल व्यय = 48 करोड़ रु.



What is the respective ratio between the total expenditure of company *P*, *Q* and *S* together to the total expenditure?

**Options:**

- 1) 31 : 60
- 2) 50 : 31
- 3) 60 : 31
- 4) 31 : 50

**Correct Answer:** 31 : 50

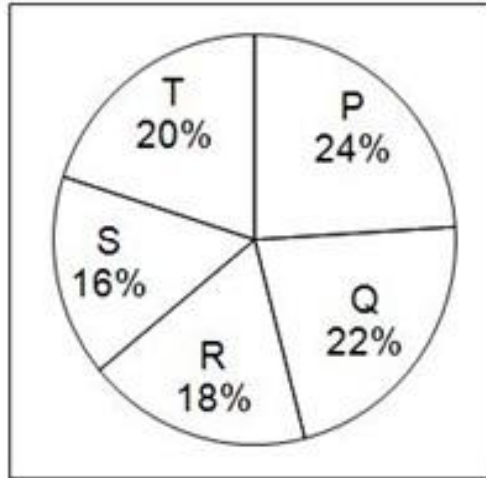
**QID : 149 -**

The following pie chart shows the expenditure (in percentage) of five companies *P*, *Q*, *R*, *S* and *T* in the year 2016.

Total Expenditure = Rs 48 crores

नीचे दिए गए वृत्त चित्र में वर्ष 2016 में *P*, *Q*, *R*, *S* तथा *T* पाँच कंपनियों के खर्चे (प्रतिशत में) को दर्शाया गया है।

कुल व्यय = 48 करोड़ रु.



Total amount spent by company S is what percent of total amount spent by company T and R?

**Options:**

1) 42.1

2) 43

3) 39.68

4) 41

**Correct Answer:** 42.1

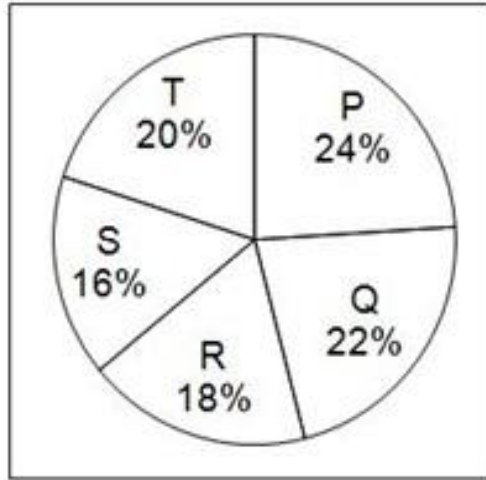
**QID : 150 -**

The following pie chart shows the expenditure (in percentage) of five companies *P*, *Q*, *R*, *S* and *T* in the year 2016.

Total Expenditure = Rs 48 crores

नीचे दिए गए वृत्त चित्र में वर्ष 2016 में *P*, *Q*, *R*, *S* तथा *T* पाँच कंपनियों के खर्चे (प्रतिशत में) को दर्शाया गया है।

कुल व्यय = 48 करोड़ रु.



The profit earned by company *R* is equal to the  $\frac{1}{4}$ th of the expenditure of company *Q*. What is the profit (in Rs crores) of company *R*?

**Options:**

1) 3.24

2) 4.84

3) 2.64

4) 5.66

**Correct Answer:** 2.64