Combined Graduate Level Examination (Tier-II), 2018

Roll No.	
Registration No.	
Name	
Test Venue	On Target Solutions
Test Time	10:00 AM - 12:00 PM
Test Date	13/09/2019
Subject	CGLE Tier II Paper I Quantitative abilities

Section : **Quantitative abilities**

Q.1 N solid metallic spherical balls are melted and recast into a cylindrical rod whose radius is 3 times that of a spherical ball and height is 4 times the radius of a spherical ball. The value of N is:

Ans
✗ 1. 30
✓ 2. 27
✗ 3. 24
✗ 4. 36

Question ID : **558101518**
Status : **Answered**
Chosen Option : **2**

Q.2 If x is the remainder when 3^{61284} is divided by 5 and y is the remainder when 4^{96} is divided by 6, then what is the value of $(2x - y)$?

Ans
✗ 1. -4
✗ 2. 4
✓ 3. -2
✗ 4. 2

Question ID : **558101459**
Status : **Marked For Review**
Chosen Option : **2**

Q.3 What is the area (in square units) of the triangular region enclosed by the graphs of the equations $x + y = 3, 2x + 5y = 12$ and the x-axis?

Ans
✗ 1. 2
✓ 2. 3
✗ 3. 4
✗ 4. 6

Question ID : **558101521**
Status : **Answered**
Chosen Option : **1**

Q.4 The value of $\sqrt{28 + 10\sqrt{3}} - \sqrt{7 - 4\sqrt{3}}$ is closest to:

Ans
✗ 1. 7.2
✗ 2. 6.1
✓ 3. 6.5
✗ 4. 5.8

Question ID : **558101467**
Status : **Answered**

Chosen Option : 3

Q.5 If $\sec\theta + \tan\theta = p, (p > 1)$ then $\frac{\text{cosec}\theta+1}{\text{cosec}\theta-1} = ?$

Ans

1. $\frac{p+1}{p-1}$ ✗
2. p^2 ✓
3. $\frac{p-1}{p+1}$ ✗
4. $2p^2$ ✗

Question ID : **558101547**
Status : **Answered**
Chosen Option : **2**

Q.6 The value $\text{cosec}\,(67° + \theta) - \sec(23° - \theta) + \cos15°\cos35°\text{cosec}55°\cos60°\text{cosec}75°$ is:

Ans

1. 2 ✗
2. 0 ✗
3. 1 ✗
4. $\frac{1}{2}$ ✓

Question ID : **558101550**
Status : **Answered**
Chosen Option : **4**

Q.7 35% of goods were sold at a profit of 65%, while the remaining were sold at x% loss. If the overall loss is 12%, then what is the value of x ? (correct to one decimal place)

Ans

1. 51.8 ✗
2. 50.6 ✗
3. 53.5 ✓
4. 52.4 ✗

Question ID : **558101482**
Status : **Marked For Review**
Chosen Option : **3**

Q.8 In a circle with centre O, ABCD is a cyclic quadrilateral and AC is the diameter. Chords AB and CD are produced to meet at E. If $\angle CAE = 34°$ and $\angle E = 30°$, then $\angle CBD$ is equal to:

Ans

1. $36°$ ✗
2. $26°$ ✓
3. $24°$ ✗
4. $34°$ ✗

Question ID : **558101537**
Status : **Marked For Review**
Chosen Option : **2**

Q.9 $ab(a-b) + bc(b-c) + ca(c-a)$ is equal to:

Ans

1. $(a+b)(b-c)(c-a)$ ✗
2. $(a-b)(b+c)(c-a)$ ✗
3. $(a-b)(b-c)(c-a)$ ✗

✔ 4. $(b-c)(b-a)(a-c)$

Question ID : **558101522**
Status : **Answered**
Chosen Option : **3**

Q.10 The radius of the base of a right circular cylinder is increased by 20%. By what per cent should its height be reduced so that its volume remains the same as before?

Ans

✘ 1. 25

✘ 2. $30\frac{2}{9}$

✔ 3. $30\frac{5}{9}$

✘ 4. 28

Question ID : **558101513**
Status : **Answered**
Chosen Option : **3**

Q.11 A is as efficient as B and C together. Working together A and B can complete a work in 36 days and C alone can complete it in 60 days. A and C work together for 10 days. B alone will complete the remaining work in:

Ans

✔ 1. 110 days

✘ 2. 88 days

✘ 3. 84 days

✘ 4. 90 days

Question ID : **558101506**
Status : **Answered**
Chosen Option : **1**

Q.12 If $2\cos^2\theta + 3\sin\theta = 3$, where $0° < \theta < 90°$, then what is the value of $\sin^2 2\theta + \cos^2\theta + \tan^2 2\theta + \text{cosec}^2 2\theta$?

Ans

✘ 1. $\frac{35}{12}$

✘ 2. $\frac{29}{3}$

✔ 3. $\frac{35}{6}$

✘ 4. $\frac{29}{6}$

Question ID : **558101546**
Status : **Answered**
Chosen Option : **3**

Q.13 The radius and the height of a right circular cone are in the ratio 5 : 12. Its curved surface area is 816.4 cm^2. What is the volume (in cm^3) of the cone? (Take $\pi = 3.14$)

Ans

✔ 1. 2512

✘ 2. 1256

✘ 3. 3140

✘ 4. 628

Question ID : **558101514**
Status : **Answered**
Chosen Option : **1**

Q.14 Given that $(5x-3)^3+(2x+5)^3+27(4-3x)^3=9(3-5x)(2x+5)(3x-4)$, then the value of $(2x+1)$ is:

Ans

1. -13 ✗
2. 15 ✓
3. -15 ✗
4. 13 ✗

Question ID : **558101524**
Status : **Answered**
Chosen Option : **2**

Q.15 The sides of a triangle are 12 cm, 35 cm and 37 cm. What is the circumradius of the triangle?

Ans

1. 19 cm ✗
2. 17.5 cm ✗
3. 17 cm ✗
4. 18.5 cm ✓

Question ID : **558101528**
Status : **Answered**
Chosen Option : **4**

Q.16 The base of a right pyramid is an equilateral triangle with area $16\sqrt{3}\text{cm}^2$. If the area of one of its lateral faces is 30 cm^2, then its height (in cm) is:

Ans

1. $\sqrt{\frac{739}{12}}$ ✗
2. $\sqrt{\frac{209}{12}}$ ✗
3. $\sqrt{\frac{611}{12}}$ ✓
4. $\sqrt{\frac{643}{12}}$ ✗

Question ID : **558101508**
Status : **Answered**
Chosen Option : **3**

Q.17 A vessel contains a 32 litre solution of acid and water in which the ratio of acid and water is 5 : 3. If 12 litres of the solution are taken out and $7\frac{1}{2}$ litres of water are added to it, then what is the ratio of acid and water in the resulting solution?

Ans

1. 4 : 7 ✗
2. 5 : 6 ✓
3. 4 : 9 ✗
4. 8 : 11 ✗

Question ID : **558101499**
Status : **Answered**
Chosen Option : **2**

Q.18

A sphere of maximum volume is cut out from a solid hemisphere. What is the ratio of the volume of the sphere to that of the remaining solid?

Ans
1. 1 : 4
2. 1 : 2
3. 1 : 3
4. 1 : 1

Question ID : **558101510**
Status : **Answered**
Chosen Option : **3**

Q.19 If $5\sqrt{5}x^3 + 2\sqrt{2}y^3 = (Ax + \sqrt{2}y)(Bx^2 + 2y^2 + Cxy)$, then the value of $(A^2 + B^2 - C^2)$ is:

Ans
1. 15
2. 20
3. 30
4. 40

Question ID : **558101523**
Status : **Answered**
Chosen Option : **2**

Q.20 The value of $(1 + \cot\theta - \operatorname{cosec}\theta)(1 + \cos\theta + \sin\theta)\sec\theta = ?$

Ans
1. -2
2. 2
3. $\sec\theta\operatorname{cosec}\theta$
4. $\sin\theta\cos\theta$

Question ID : **558101545**
Status : **Answered**
Chosen Option : **2**

Q.21 S is the incentre of ΔPQR. If $\angle PSR = 125°$, then the measure of $\angle PQR$ is:

Ans
1. 75°
2. 55°
3. 80°
4. 70°

Question ID : **558101532**
Status : **Answered**
Chosen Option : **1**

Q.22 The value of $0.4\overline{7} + 0.5\overline{03} - 0.3\overline{9} \times 0.\overline{8}$ is:

Ans
1. $0.6\overline{15}$
2. $0.\overline{615}$
3. $0.62\overline{5}$
4. $0.6\overline{25}$

Question ID : **558101462**
Status : **Answered**
Chosen Option : **3**

Q.23 If in $\triangle ABC$, D and E are the points on AB and BC respectively such that $DE \parallel BC$, and $AD : AB = 3 : 8$, then (area of $\triangle BDE$) : (area of quadrilateral DECA) =

Ans

1. 9 : 55 ✗
2. 9 : 64 ✗
3. 8 : 13 ✗
4. 25 : 39 ✓

Question ID : **558101534**
Status : **Answered**
Chosen Option : **1**

Q.24 Monika spends 72% of her income. If her income increases by 20% and savings increase by 15%, then her expenditure increases by: (correct to 1 decimal place)

Ans

1. 20.8% ✗
2. 20.2% ✗
3. 21.9% ✓
4. 19.8% ✗

Question ID : **558101474**
Status : **Answered**
Chosen Option : **3**

Q.25 A, B and C started a business with their capitals in the ratio 2 : 3 : 5. A increased his capital by 50% after 4 months, B increased his capital by $33\frac{1}{3}\%$ after 6 months and C withdrew 50% of his capital after 8 months, from the start of the business. If the total profit at the end of a year was ₹86,800, then the difference between the shares of A and C in the profit was:

Ans

1. ₹12,600 ✓
2. ₹7,000 ✗
3. ₹9,800 ✗
4. ₹8,400 ✗

Question ID : **558101497**
Status : **Not Answered**
Chosen Option : **--**

Q.26 The graph of the equations $5x - 2y + 1 = 0$ and $4y - 3x + 5 = 0$, intersect at the point $P(\alpha, \beta)$. What is the value of $(2\alpha - 3\beta)$?

Ans

1. 4 ✓
2. 6 ✗
3. -4 ✗
4. -3 ✗

Question ID : **558101520**
Status : **Answered**
Chosen Option : **1**

Q.27 An article was sold at a profit of 14%. Had it been sold for ₹121 less, a loss of 8% would have been incurred. If the same article would have been sold for ₹536.25, then the profit/loss per cent would have been:

Ans

1. Profit, 5% ✗
2. Loss, 5% ✗
3. Loss, 2.5% ✓
4. Profit, 2.5% ✗

Question ID : **558101481**

Status : **Answered**
Chosen Option : **3**

Q.28 A shopkeeper allows 18% discount on the marked price of an article and still makes a profit of 23%. If he gains ₹18.40 on the sale of the article, then what is the marked price of the article?

Ans
1. ₹140 ✗
2. ₹125 ✗
3. ₹120 ✓
4. ₹146 ✗

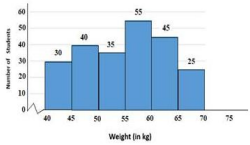
Question ID : **558101484**
Status : **Not Answered**
Chosen Option : **--**

Q.29 The value of $\frac{\sec^2\theta}{\text{cosec}^2\theta} + \frac{\text{cosec}^2\theta}{\sec^2\theta} - (\sec^2\theta + \text{cosec}^2\theta)$ is:

Ans
1. 0 ✗
2. -2 ✓
3. 2 ✗
4. 1 ✗

Question ID : **558101543**
Status : **Answered**
Chosen Option : **2**

Q.30 The given graph shows the weights of students in a school on a particular day.



The number of students weighing less than 50 kg is what per cent less than the number of students weighing 55 kg or more?

Ans
1. 44 ✓
2. 40 ✗
3. 55 ✗
4. 30 ✗

Question ID : **558101552**
Status : **Answered**
Chosen Option : **1**

Q.31 A right prism has height 18cm and its base is a triangle with sides 5 cm, 8 cm and 12 cm. What is its lateral surface area (in cm^2) ?

Ans
1. 450 ✓
2. 468 ✗
3. 432 ✗
4. 486 ✗

Question ID : **558101517**
Status : **Answered**
Chosen Option : **1**

Q.32 A can do one-third of a work in 15 days, B can do 75% of the same work in 18 days and C can do the same work in 36 days. If A, B and C work together for 7 days, in how many days will they complete the remaining work?

Ans

1. 24 days ✗
2. 18 days ✗
3. 20 days ✓
4. 16 days ✗

Question ID : **558101505**
Status : **Answered**
Chosen Option : **3**

Q.33 A person buys 80 kg of rice and sells it at a profit of as much money as he paid for 30 kg. His profit per cent is:

Ans

1. $27\frac{3}{11}$ ✗
2. 35 ✗
3. 40 ✗
4. $37\frac{1}{2}$ ✓

Question ID : **558101480**
Status : **Answered**
Chosen Option : **4**

Q.34 To cover a distance of 416 km, a train A takes $2\frac{2}{3}$ hours more than train B. If the speed of A is doubled, it would take $1\frac{1}{3}$ hours less than B. What is the speed (in km/h) of train A?

Ans

1. 56 ✗
2. 54 ✗
3. 52 ✓
4. 65 ✗

Question ID : **558101500**
Status : **Marked For Review**
Chosen Option : **3**

Q.35 The value of $\frac{2\sqrt{10}}{\sqrt{5}+\sqrt{2}-\sqrt{7}} - \sqrt{\frac{\sqrt{5}-2}{\sqrt{5}+2}} - \frac{3}{\sqrt{7}-2}$ is:

Ans

1. $2+\sqrt{2}$ ✗
2. $2\sqrt{5}$ ✗
3. $\sqrt{2}$ ✓
4. $\sqrt{7}$ ✗

Question ID : **558101468**
Status : **Not Answered**
Chosen Option : **--**

Q.36 The price of oil is increased by 20%. However, its consumption decreased by $8\frac{1}{3}\%$. What is the percentage increase or decrease in the expenditure on it?

Ans

1. Increase by 10% ✓
2. Increase by 5% ✗
3. Decrease by 10% ✗
4. Decrease by 5% ✗

Question ID : 558101478
Status : **Answered**
Chosen Option : **1**

Q.37 The average age of 120 students in a group is 13.56 years. 35% of the number of students are girls and the rest are boys. If the ratio of the average age of boys and girls is 6 : 5, then what is the average age (in years) of the girls?

Ans

✔ 1. 12
✘ 2. 11.6
✘ 3. 10
✘ 4. 14.4

Question ID : **558101494**
Status : **Answered**
Chosen Option : **3**

Q.38 The marked price of an article is ₹1500. If two successive discounts, each of $x\%$, on the marked price is equal to a single discount of ₹587.40, then what will be the selling price of the article if a single discount of $x\%$ is given on the marked price?

Ans

✘ 1. ₹1,025
✘ 2. ₹1,155
✔ 3. ₹1,170
✘ 4. ₹1,200

Question ID : **558101483**
Status : **Marked For Review**
Chosen Option : **4**

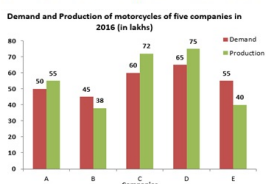
Q.39 Two parallel chords on the same side of the centre of a circle are 12 cm and 20 cm long and the radius of the circle is $5\sqrt{13}$ cm. What is the distance (in cm) between the chords?

Ans

✔ 1. 2
✘ 2. 3
✘ 3. 2.5
✘ 4. 1.5

Question ID : **558101539**
Status : **Answered**
Chosen Option : **1**

Q.40 Study the following bar graph and answer the question given.



The ratio of the total demand of motorcycles of companies A, C and E to the total production of motorcycles of B and C is:

Ans

✘ 1. 1 : 1
✘ 2. 2 : 1
✘ 3. 11 : 10
✔ 4. 3 : 2

Question ID : **558101557**

Status : **Answered**
Chosen Option : **4**

Q.41 A circle touches the side BC of ΔABC at D and AB and AC are produced to E and F, respectively. If AB = 10 cm, AC = 8.6 cm and BC = 6.4 cm, then BE = ?

Ans
1. 3.2 cm ✗
2. 3.5 cm ✗
3. 2.2 cm ✗
4. 2.5 cm ✓

Question ID : **558101538**
Status : **Answered**
Chosen Option : **1**

Q.42 If the measure of each exterior angle of a regular polygon is $\left(51\frac{3}{7}\right)°$, then the ratio of the number of its diagonals to the number of its sides is:

Ans
1. 5 : 2 ✗
2. 13 : 6 ✗
3. 3 : 1 ✗
4. 2 : 1 ✓

Question ID : **558101533**
Status : **Answered**
Chosen Option : **4**

Q.43 Two numbers are in the ratio 3 : 5. If 13 is subtracted from each, the new numbers are in the ratio 10 : 21. If 15 is added to each of the original numbers, then the ratio becomes:

Ans
1. 5 : 7 ✗
2. 23 : 33 ✗
3. 4 : 5 ✗
4. 24 : 35 ✓

Question ID : **558101490**
Status : **Answered**
Chosen Option : **4**

Q.44 Pipes A and B are filling pipes while pipe C is an emptying pipe. A and B can fill a tank in 72 and 90 minutes respectively. When all the three pipes are opened together, the tank gets filled in 2 hours. A and B are opened together for 12 minutes, then closed and C is opened. The tank will be empty after:

Ans
1. 15 minutes ✗
2. 18 minutes ✓
3. 12 minutes ✗
4. 16 minutes ✗

Question ID : **558101504**
Status : **Answered**
Chosen Option : **2**

Q.45 The LCM of two numbers x and y is 204 times their HCF. If their HCF is 12 and the difference between the numbers is 60, then $x + y$ = ?

Ans
1. 660 ✗
2. 426 ✗
3. 852 ✗
4. 348 ✓

Question ID : **558101470**

Status : **Marked For Review**
Chosen Option : **1**

Q.46 In ΔABC, $BE \perp AC$, $CD \perp AB$ and BE and CD intersect each other at O. The bisectors of $\angle OBC$ and $\angle OCB$ meet at P. If $\angle BPC = 148°$, then what is the measure of $\angle A$?

Ans
1. ✗ $56°$
2. ✗ $28°$
3. ✗ $32°$
4. ✓ $64°$

Question ID : **558101531**
Status : **Marked For Review**
Chosen Option : **1**

Q.47 The value of $\frac{2(\sin^6\theta+\cos^6\theta)-3(\sin^4\theta+\cos^4\theta)}{\cos^4\theta-\sin^4\theta-2\cos^2\theta}$ is:

Ans
1. ✗ -1
2. ✗ -2
3. ✗ 2
4. ✓ 1

Question ID : **558101544**
Status : **Answered**
Chosen Option : **4**

Q.48 The value of $24 \times 2 \div 12 + 12 \div 6$ of $2 \div (15 \div 8 \times 4)$ of $(28 \div 7$ of $5)$ is:

Ans
1. ✓ $4\frac{1}{6}$
2. ✗ $4\frac{8}{75}$
3. ✗ $4\frac{2}{3}$
4. ✗ $4\frac{32}{75}$

Question ID : **558101461**
Status : **Answered**
Chosen Option : **1**

Q.49 A person covers 40% of the distance from A to B at 8 km/h, 40% of the remaining distance at 9 km/h and the rest at 12 km/h. His average speed (in km/h) for the journey is:

Ans
1. ✗ $9\frac{5}{8}$
2. ✗ $9\frac{2}{3}$
3. ✓ $9\frac{3}{8}$
4. ✗ $9\frac{1}{3}$

Question ID : **558101502**
Status : **Not Answered**
Chosen Option : **--**

Q.50 A 15 m deep well with radius 2.8 m is dug and the earth taken out from it is spread evenly to form a platform of breadth 8 m and height 1.5 m. What will be the length of the platform? (Take $\pi = \frac{22}{7}$)

Ans

1. 28.4 m
2. 28.8 m
3. 30.2 m
4. 30.8 m

Question ID : **558101515**
Status : **Not Answered**
Chosen Option : **--**

Q.51 In $\Delta PQR, \angle Q > \angle R$, PS is the bisector of $\angle P$ and $PT \perp PQ$. If $\angle SPT = 28°$ and $\angle R = 23°$, then the measure of $\angle Q$ is:

Ans
1. $74°$
2. $79°$
3. $82°$
4. $89°$

Question ID : **558101527**
Status : **Answered**
Chosen Option : **2**

Q.52 25 persons can complete a work in 60 days. They started the work. 10 persons left the work after x days. If the whole work was completed in 80 days, then what is the value of x ?

Ans
1. 9
2. 8
3. 12
4. 15

Question ID : **558101507**
Status : **Not Answered**
Chosen Option : **--**

Q.53 The value of $\sin^2 64° + \cos 64° \sin 26° + 2\cos 43° \operatorname{cosec} 47°$ is:

Ans
1. 4
2. 1
3. 2
4. 3

Question ID : **558101549**
Status : **Answered**
Chosen Option : **4**

Q.54 A tank is in the form of a cuboid with length 12 m. If 18 kilolitre of water is removed from it, the water level goes down by 30 cm. What is the width (in m) of the tank?

Ans
1. 4
2. 5
3. 5.5
4. 4.5

Question ID : **558101519**
Status : **Not Answered**
Chosen Option : **--**

Q.55 In finding the HCF of two numbers by division method, the last divisor is 17 and the quotients are 1, 11 and 2, respectively. What is sum of the two numbers?

Ans
1. 833

2. 867
3. 816
4. 901

Question ID : **558101469**
Status : **Answered**
Chosen Option : **3**

Q.56 A person invested one-fourth of the sum of ₹25,000 at a certain rate of simple interest and the rest at 4% p.a. higher rate. If the total interest received for 2 years is ₹4,125, what is the rate at which the second sum was invested?

Ans

1. 9.5%
2. 9.25%
3. 5.25%
4. 7.5%

Question ID : **558101486**
Status : **Not Answered**
Chosen Option : **--**

Q.57 The radius of the base of a right circular cylinder is 3 cm and its curved surface area is 60 πcm^2. The volume of the cylinder (in cm^3) is:

Ans

1. 90π
2. 72π
3. 60π
4. 81π

Question ID : **558101511**
Status : **Answered**
Chosen Option : **1**

Q.58 If $\frac{3(x^2+1)-7x}{3x} = 6,\ x \neq 0$, then the value of $\sqrt{x} + \frac{1}{\sqrt{x}}$ is:

Ans

1. $\sqrt{\frac{25}{3}}$
2. $\sqrt{\frac{11}{3}}$
3. $\sqrt{\frac{35}{3}}$
4. $\sqrt{\frac{31}{3}}$

Question ID : **558101526**
Status : **Answered**
Chosen Option : **4**

Q.59 Basir's working hours per day were increased by 15% and his wages per hour were increased by 20%. By how much per cent did his daily earnings increase?

Ans

1. 40
2. 38

3. $\frac{35}{36}$
4. $\frac{36}{35}$

Question ID : **558101477**
Status : **Answered**
Chosen Option : **2**

Q.60 A student was asked to find the value of $9\frac{4}{9} \div 11\frac{1}{3}$ of $\frac{1}{6} + \left(1\frac{1}{3} \times 1\frac{4}{5} \div \frac{3}{5}\right) \times 2\frac{1}{6}$ of $\frac{2}{3} \div \frac{4}{3}$ of $\frac{2}{3}$. His answer was $19\frac{1}{4}$. What is the difference between his answer and the correct answer?

Ans

1. $7\frac{3}{4}$
2. $6\frac{2}{3}$
3. $7\frac{1}{2}$
4. $6\frac{1}{3}$

Question ID : **558101463**
Status : **Marked For Review**
Chosen Option : **1**

Q.61 If a 10-digit number $5\,4\,3\,2\,y\,1\,7\,4\,9\,x$ is divisible by 72, then what is the value of $(5x - 4y)$?

Ans

1. 14
2. 15
3. 10
4. 9

Question ID : **558101460**
Status : **Answered**
Chosen Option : **1**

Q.62 What is the remainder when $(127^{97} + 97^{97})$ is divided by 32?

Ans

1. 4
2. 2
3. 7
4. 0

Question ID : **558101465**
Status : **Answered**
Chosen Option : **2**

Q.63 The value of $\frac{(\sin\theta - \cos\theta)(1 + \tan\theta + \cot\theta)}{1 + \sin\theta\cos\theta} = ?$

Ans

1. $\sec\theta - \operatorname{cosec}\theta$
2. $\operatorname{cosec}\theta - \sec\theta$
3. $\sin\theta + \cos\theta$
4. $\tan\theta - \cot\theta$

Question ID : **558101542**
Status : **Answered**
Chosen Option : **1**

Q.64 A, B and C spend 80%, 85% and 75% of their incomes, respectively. If their savings are in the ratio 8 : 9 : 20 and the difference between the incomes of A and C is ₹18,000, then the income of B is:

Ans
1. ₹24,000
2. ₹27,000
3. ₹30,000
4. ₹36,000

Question ID : **558101492**
Status : **Not Answered**
Chosen Option : **--**

Q.65 If 25% of half of x is equal to 2.5 times the value of 30% of one-fourth of y, then x is what per cent more or less than y?

Ans
1. $33\frac{1}{3}\%$ more
2. 50% more
3. $33\frac{1}{3}\%$ less
4. 50% less

Question ID : **558101478**
Status : **Answered**
Chosen Option : **2**

Q.66 The value of $\frac{\sin\theta+\cos\theta-1}{\sin\theta-\cos\theta+1} \times \frac{\tan^2\theta(\text{cosec}^2\theta-1)}{\sec\theta-\tan\theta}$ is:

Ans
1. 0
2. -1
3. 1
4. $\frac{1}{2}$

Question ID : **558101541**
Status : **Marked For Review**
Chosen Option : **1**

Q.67 In an examination, A obtained 10% more marks than B, B obtained 20% more marks than C and C obtained 32% less marks than D. If A obtained 272 more marks than C, then the marks obtained by B is:

Ans
1. 850
2. 816
3. 1020
4. 952

Question ID : **558101475**
Status : **Answered**
Chosen Option : **2**

Q.68 In quadrilateral ABCD, $\angle C = 72°$ and $\angle D = 28°$. The bisectors of $\angle A$ and $\angle B$ meet in O. What is the measure of $\angle AOB$?

Ans
1. 48°
2. 54°
3. 50°
4. 36°

Question ID : **558101540**
Status : **Answered**

Chosen Option : 3

Q.69 a, b and c are three fractions such that $a < b < c$. If c is divided by a, the result is $\frac{9}{2}$, which exceeds b by $\frac{23}{6}$. The sum of a, b and c is $\frac{19}{12}$. What is the value of $(2a + b - c)$?

Ans

1. $\frac{1}{2}$
2. $\frac{1}{3}$
3. $\frac{1}{12}$
4. $\frac{1}{4}$

Question ID : **558101466**
Status : **Marked For Review**
Chosen Option : **4**

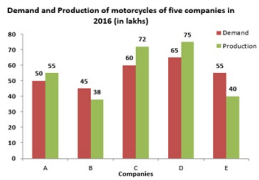
Q.70 How many kg of salt costing ₹28 per kg must be mixed with 39.6 kg of salt costing ₹16 per kg, so that selling the mixture at ₹29.90, there is a gain of 15%?

Ans

1. 33
2. 31
3. 35
4. 32

Question ID : **558101498**
Status : **Not Answered**
Chosen Option : **--**

Q.71 Study the following bar graph and answer the question given.



The total production of motorcycles of companies C, D and E is what per cent less than the total demand of motor cycles of all the companies during five years?

Ans

1. 43
2. 32
3. 38
4. 47

Question ID : **558101558**
Status : **Answered**
Chosen Option : **3**

Q.72 A, B and C started a business. Thrice the investment of A is equal to twice the investment of B and also equal to four times the investment of C. If C's share out of the total profit is ₹4,863, then the share of A in the profit is:

Ans

1. ₹7,272
2. ₹6,484
3. ₹9,726
4. ₹8,105

Question ID : **558101495**
Status : **Answered**
Chosen Option : **2**

Q.73 Two positive numbers differ by 2001. When the larger number is divided by the smaller number, the quotient is 9 and the remainder is 41. The sum of the digits of the larger number is:

Ans
1. 15 ✗
2. 11 ✗
3. 10 ✗
4. 14 ✓

Question ID : **558101472**
Status : **Answered**
Chosen Option : **4**

Q.74 Let $x = \sqrt[6]{27} - \sqrt{6\frac{3}{4}}$ and $y = \frac{\sqrt{45}+\sqrt{605}+\sqrt{245}}{\sqrt{80}+\sqrt{125}}$, then the value of $x^2 + y^2$ is:

Ans
1. $\frac{223}{36}$ ✓
2. $\frac{221}{36}$ ✗
3. $\frac{221}{9}$ ✗
4. $\frac{227}{9}$ ✗

Question ID : **558101471**
Status : **Not Answered**
Chosen Option : **--**

Q.75 If $(5x + 2y) : (10x + 3y) = 5 : 9$, then $(2x^2 + 3y^2) : (4x^2 + 9y^2) = ?$

Ans
1. 31 : 87 ✓
2. 10 : 27 ✗
3. 16 : 47 ✗
4. 1 : 3 ✗

Question ID : **558101491**
Status : **Answered**
Chosen Option : **1**

Q.76 The average of 18 numbers is 37.5. If six numbers of average x are added to them, then the average of all the numbers increases by one. The value of x is:

Ans
1. 40 ✗
2. 41.5 ✓
3. 42 ✗
4. 38.5 ✗

Question ID : **558101495**
Status : **Answered**
Chosen Option : **2**

Q.77

In an office, $\frac{5}{8}$ of the total number of employees are males and the rest are females. $\frac{2}{5}$ of the number of males are non-technical workers while $\frac{1}{3}$ of the number of females are technical workers. What fraction of the total number of employees are technical workers?

Ans

✔ 1. $\frac{5}{8}$

✘ 2. $\frac{2}{5}$

✘ 3. $\frac{1}{2}$

✘ 4. $\frac{3}{8}$

Question ID : **558101473**
Status : **Answered**
Chosen Option : **1**

Q.78 A solid cylinder of base radius 12 cm and height 15 cm is melted and recast into n toys each in the shape of a right circular cone of height 9 cm mounted on a hemisphere of radius 3 cm. The value of n is:

Ans

✘ 1. 27

✘ 2. 64

✔ 3. 48

✘ 4. 54

Question ID : **558101512**
Status : **Answered**
Chosen Option : **3**

Q.79 In ΔABC, D and E are the points on AB and AC respectively such that $AD \times AC = AB \times AE$. If $\angle ADE = \angle ACB + 30°$ and $\angle ABC = 78°$, then $\angle A = ?$

Ans

✘ 1. 56°

✔ 2. 54°

✘ 3. 68°

✘ 4. 48°

Question ID : **558101536**
Status : **Answered**
Chosen Option : **2**

Q.80 P and Q are two points on the ground on either side of a pole. The angles of elevation of the top of the pole as observed from P and Q are 60° and 30°, respectively and the distance between them is $84\sqrt{3}$ m. What is the height (in m) of the pole?

Ans

✔ 1. 63

✘ 2. 73.5

✘ 3. 52.5

✘ 4. 60

Question ID : **558101551**
Status : **Answered**
Chosen Option : **1**

Q.81 If in $\Delta PQR, \angle P = 120°$, $PS \perp QR$ at S and $PQ + QS = SR$, then the measure of $\angle Q$ is:

Ans

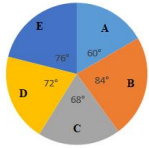
✘ 1. 20°

✘ 2. 50°

✔ 3. 40°
✘ 4. 30°

Question ID : **558101535**
Status : **Not Answered**
Chosen Option : **--**

Q.82 The given pie-chart shows the break-up of total marks obtained by a student in five subjects A, B, C, D and E. The maximum marks in each subject is 150 and he obtained a total of 600 marks.



In how many subjects did the student obtain more than his average score?

Ans
✘ 1. 3
✔ 2. 2
✘ 3. 4
✘ 4. 1

Question ID : **558101554**
Status : **Answered**
Chosen Option : **2**

Q.83 Walking at 60% of his usual speed, a man reaches his destination 1 hour 40 minutes late. His usual time (in hours) to reach the destination is:

Ans
✔ 1. $2\frac{1}{2}$
✘ 2. $2\frac{1}{4}$
✘ 3. $3\frac{1}{8}$
✘ 4. $3\frac{1}{4}$

Question ID : **558101503**
Status : **Answered**
Chosen Option : **1**

Q.84 A man can row a distance of 900 metres against the stream in 12 minutes and returns to the starting point in 9 minutes. What is the speed (in km/h) of the man in still water?

Ans
✘ 1. $4\frac{1}{2}$
✘ 2. 6
✔ 3. $5\frac{1}{4}$
✘ 4. 5

Question ID : **558101501**
Status : **Answered**
Chosen Option : **3**

Q.85 If $x + y + z = 6$, $xyz = -10$ and $x^2 + y^2 + z^2 = 30$, then what is the value of $(x^3 + y^3 + z^3)$?

Ans

1. 132
2. 135
3. 130
4. 127

Question ID : **558101525**
Status : **Not Answered**
Chosen Option : **--**

Q.86 The value of $\frac{(4.6)^4+(5.4)^4+(24.84)^2}{(4.6)^2+(5.4)^2+24.84}$ is:

Ans
1. 24.42
2. 24.24
3. 25.42
4. 25.48 ✔

Question ID : **558101464**
Status : **Not Answered**
Chosen Option : **--**

Q.87 If $\frac{\sin\theta}{1+\cos\theta}+\frac{1+\cos\theta}{\sin\theta}=\frac{4}{\sqrt{3}}, 0°<\theta<90°$, then the value of $(\tan\theta+\sec\theta)^{-1}$ is:

Ans
1. $2-\sqrt{3}$ ✔
2. $3-\sqrt{2}$
3. $2+\sqrt{3}$
4. $3+\sqrt{2}$

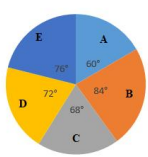
Question ID : **558101548**
Status : **Answered**
Chosen Option : **1**

Q.88 Sudha bought 80 articles at the same price. She sold some of them at 8% profit and the remaining at 12% loss resulting in an overall profit of 6%. The number of items sold at 8% profit is:

Ans
1. 64
2. 60
3. 72 ✔
4. 70

Question ID : **558101479**
Status : **Answered**
Chosen Option : **3**

Q.89 The given pie-chart shows the break-up of total marks obtained by a student in five subjects A, B, C, D and E. The maximum marks in each subject is 150 and he obtained a total of 600 marks.



The total marks obtained by the student in subjects C and E is approximately how much per cent more than what he obtained in A and D together?

Ans
1. 9.09 % ✔

2. 10.25 %
3. 8.33 %
4. 7.26 %

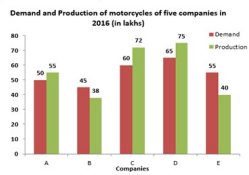
Question ID : **558101555**
Status : **Not Answered**
Chosen Option : **--**

Q.90 If the selling price of an article is 32% more than its cost price and the discount offered on its marked price is 12%, then what is the ratio of its cost price to the marked price?

Ans
1. 4 : 5
2. 3 : 8
3. 2 : 3
4. 1 : 2

Question ID : **558101485**
Status : **Answered**
Chosen Option : **3**

Q.91 Study the following bar graph and answer the question given.



The number of companies whose production of motorcycles is equal to or more than the average demand of motorcycles (per year) over five years is:

Ans
1. 4
2. 2
3. 1
4. 3

Question ID : **558101556**
Status : **Answered**
Chosen Option : **4**

Q.92 The internal diameter of a hollow hemispherical vessel is 24 cm. It is made of a steel sheet which is 0.5 cm thick. What is the total surface area (in cm^2) of the vessel?

Ans
1. 612.75π
2. 468.75π
3. 600.2π
4. 600.5π

Question ID : **558101509**
Status : **Not Answered**
Chosen Option : **--**

Q.93 The bisector of $\angle A$ in ΔABC meets BC in D. If AB = 15 cm, AC = 13 cm and BC = 14 cm, then DC = ?

Ans
1. 8.5 cm
2. 7.5 cm
3. 6.5 cm
4. 8 cm

Question ID : **558101530**
Status : Answered
Chosen Option : **2**

Q.94 A certain loan was returned in two equal half yearly instalments each of ₹6,760. If the rate of interest was 8% p.a., compounded yearly, how much was the interest paid on the loan?

Ans

✗ 1. ₹750
✗ 2. ₹810
✗ 3. ₹790
✓ 4. ₹770

Question ID : **558101489**
Status : **Answered**
Chosen Option : **4**

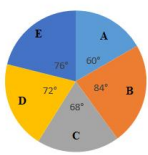
Q.95 A sum is divided among A, B, C and D such that the ratio of the shares of A and B is 2 : 3, that of B and C is 1 : 2 and that of C and D is 3 : 4. If the difference between the shares of A and D is ₹648, then the sum of their shares is:

Ans

✓ 1. ₹2,052
✗ 2. ₹2,160
✗ 3. ₹2,484
✗ 4. ₹1,944

Question ID : **558101493**
Status : **Answered**
Chosen Option : **1**

Q.96 The given pie-chart shows the break-up of total marks obtained by a student in five subjects A, B, C, D and E. The maximum marks in each subject is 150 and he obtained a total of 600 marks.



What is the difference between the marks obtained by the student in subjects B and D?

Ans

✓ 1. 20
✗ 2. 27
✗ 3. 30
✗ 4. 12

Question ID : **558101553**
Status : **Answered**
Chosen Option : **1**

Q.97 A sector of radius 10.5 cm with the central angle 120° is folded to form a cone by joining the two bounding radii of the sector. What is the volume (in cm^3)of the cone so formed?

Ans

✗ 1. $\frac{343\sqrt{2}}{6}\pi$
✗ 2. $\frac{343\sqrt{3}}{6}\pi$
✗ 3. $\frac{343\sqrt{3}}{12}\pi$

4. $\frac{343\sqrt{2}}{12\pi}$

Question ID : **558101516**
Status : **Not Answered**
Chosen Option : **--**

Q.98 A certain sum amounts to ₹4,205.55 at 15% p.a. in $2\frac{2}{5}$ years, interest compounded yearly. The sum is:

Ans
1. ₹3,200
2. ₹3,500
3. ₹2,700
4. ₹3,000

Question ID : **558101488**
Status : **Answered**
Chosen Option : **4**

Q.99 In ΔABD, C is the midpoint of BD. If AB = 10 cm, AD = 12 cm and AC = 9 cm, then BD = ?

Ans
1. $2\sqrt{41}$ cm
2. $2\sqrt{10}$ cm
3. $\sqrt{41}$ cm
4. $\sqrt{10}$ cm

Question ID : **558101529**
Status : **Answered**
Chosen Option : **1**

Q.100 A sum of ₹10,500 amounts to ₹13,825 in $3\frac{4}{5}$ years at a certain rate per cent per annum simple interest. What will be the simple interest on the same sum for 5 years at double the earlier rate?

Ans
1. ₹8,470
2. ₹8,750
3. ₹8,670
4. ₹8,560

Question ID : **558101487**
Status : **Answered**
Chosen Option : **2**