

Combined Graduate Level Examination (Tier-II), 2018

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| Roll No. | |
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| Name | |
| Test Venue | |
| Test Time | 10:00 AM - 12:00 PM |
| Test Date | 11/09/2019 |
| Subject | CGLE Tier II Paper I Quantitative abilities |

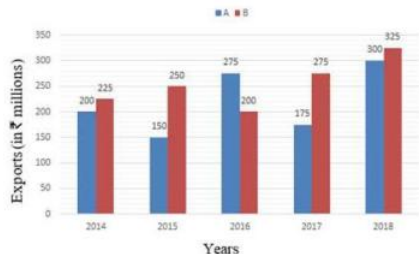
Section : Quantitative abilities

Q.1 The value of $\frac{7+8 \times 8 \div 8 \text{ of } 8+8 \div 8 \times 4 \text{ of } 4}{4 \div 4 \text{ of } 4+4 \times 4 \div 4 - 4 \div 4 \text{ of } 2}$ is:

- Ans**
- ☒ 1. 7.8
 - ☒ 2. 4.6
 - ☒ 3. 8.7
 - ☒ 4. 6.4

Question ID : 558101261
Status : Answered
Chosen Option : 4

Q.2 The bar graph shows the exports of Cars of Type A and B (in ₹ millions).



In which year, the exports of cars of type A was 10% more than the average exports (per year) of cars of type A over the five years?

- Ans**
- ☒ 1. 2015
 - ☒ 2. 2017
 - ☒ 3. 2014
 - ☒ 4. 2016

Question ID : 558101358
Status : Answered
Chosen Option : 4

Q.3 If $\sin \theta = \sqrt{3} \cos \theta$, $0^\circ < \theta < 90^\circ$, then the value of $2\sin^2\theta + \sec^2\theta + \sin\theta \sec\theta + \operatorname{cosec}\theta$ is:

- Ans**
- ☒ 1. $\frac{33+10\sqrt{3}}{6}$
 - ☒ 2. $\frac{19+10\sqrt{3}}{6}$

☒ 3. $\frac{33+10\sqrt{3}}{3}$

☒ 4. $\frac{19+10\sqrt{3}}{3}$

Question ID : 558101346
Status : Answered
Chosen Option : 1

Q.4 To do a certain work, the ratio of efficiency of A to that of B is 3 : 7. Working together, they can complete the work in $10\frac{1}{2}$ days. They work together for 8 days. 60% of the remaining work will be completed by A alone in:

Ans ☒ 1. $5\frac{1}{2}$ days

☒ 2. 5 days

☒ 3. $6\frac{1}{2}$ days

☒ 4. 4 days

Question ID : 558101304
Status : Answered
Chosen Option : 2

Q.5 The average of thirteen numbers is 47. The average of the first three numbers is 39 and that of next seven numbers is 49. The 11th number is two times the 12th number and 12th number is 3 less than the 13th number. What is the average of 11th and 13th numbers?

Ans ☒ 1. 54.5

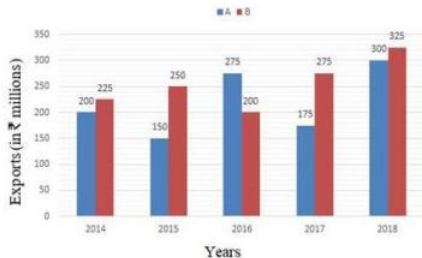
☒ 2. 57

☒ 3. 56

☒ 4. 55.5

Question ID : 558101294
Status : Answered
Chosen Option : 2

Q.6 The bar graph shows the exports of Cars of Type A and B (in ₹ millions).



What is the ratio of the total exports of cars of type A in 2014 and 2018 to the total exports of cars of type B in 2015 and 2016?

Ans ☒ 1. 11 : 10

☒ 2. 10 : 9

☒ 3. 5 : 4

☒ 4. 3 : 2

Question ID : 558101356
Status : Answered

Q.7 If $x^8 - 1442x^4 + 1 = 0$, then a possible value of $x - \frac{1}{x}$ is:

- Ans
- ☐ 1. 5
 - ☐ 2. 8
 - ☐ 3. 4
 - ☒ 4. 6

Question ID : 558101322

Status : Answered

Chosen Option : 4

Q.8 The graphs of the equations $3x + y - 5 = 0$ and $2x - y - 5 = 0$ intersect at the point $P(\alpha, \beta)$. What is the value of $(3\alpha + \beta)$?

- Ans
- ☐ 1. 4
 - ☐ 2. -4
 - ☐ 3. 3
 - ☒ 4. 5

Question ID : 558101320

Status : Answered

Chosen Option : 4

Q.9 If $\sqrt{86 - 60\sqrt{2}} = a - b\sqrt{2}$, then what will be the value of $\sqrt{a^2 + b^2}$, correct to one decimal place?

- Ans
- ☐ 1. 8.4
 - ☐ 2. 8.2
 - ☒ 3. 7.8
 - ☐ 4. 7.2

Question ID : 558101268

Status : Answered

Chosen Option : 3

Q.10 The sides AB and AC of $\triangle ABC$ are produced to P and Q respectively. The bisectors of $\angle CBP$ and $\angle BCQ$ meet at R. If the measure of $\angle A$ is 44° , then what is the measure of $\frac{1}{2}\angle BOC$?

- Ans
- ☐ 1. 33°
 - ☐ 2. 38°
 - ☒ 3. 34°
 - ☐ 4. 32°

Question ID : 558101327

Status : Answered

Chosen Option : 3

Q.11 In $\triangle ABC$, D is a point on side BC such that $\angle ADC = \angle BAC$. If CA = 12 cm, CB = 8 cm, then CD is equal to:

- Ans
- ☐ 1. 12 cm
 - ☐ 2. 15 cm

✓ 3. 18 cm

✗ 4. 16 cm

Question ID : 558101336

Status : Answered

Chosen Option : 3

Q.12 A person marks his goods $x\%$ above the cost price and allows a discount of 30% on the marked price. If his profit is 5%, then the value of x will be:

Ans ✓ 1. 50

✗ 2. 60

✗ 3. 45

✗ 4. 35

Question ID : 558101285

Status : Answered

Chosen Option : 1

Q.13 If $a^2 + b^2 + c^2 + 96 = 8(a + b - 2c)$, then $\sqrt{ab - bc + ca}$ is equal to:

Ans ✗ 1. 6

✗ 2. $2\sqrt{2}$

✓ 3. 4

✗ 4. $2\sqrt{3}$

Question ID : 558101326

Status : Answered

Chosen Option : 3

Q.14 A right circular cylinder of maximum volume is cut out from a solid wooden cube. The material left is what percent of the volume (nearest to an integer) of the original cube?

Ans ✗ 1. 19

✗ 2. 28

✗ 3. 23

✓ 4. 21

Question ID : 558101313

Status : Answered

Chosen Option : 4

Q.15 The ratio of the volumes of two cylinders is $x : y$ and the ratio of their diameters is $a : b$. What is the ratio of their heights?

Ans ✗ 1. $xb : ya$

✗ 2. $xa : yb$

✓ 3. $xb^2 : ya^2$

✗ 4. $xa^2 : yb^2$

Question ID : 558101312

Status : Answered

Q.16 The value of the expression $(\cos^6\theta + \sin^6\theta - 1)(\tan^2\theta + \cot^2\theta + 2)$ is:

- Ans
- ☒ 1. 0
 - ☒ 2. -1
 - ☒ 3. -3
 - ☒ 4. 1

Question ID : 558101343

Status : Answered

Chosen Option : 3

Q.17 If A is 28% more than B and C is 25% less than the sum of A and B, then by what percent will C be more than A (correct to one decimal place)?

- Ans
- ☒ 1. 32.2%
 - ☒ 2. 28%
 - ☒ 3. 43%
 - ☒ 4. 33.6%

Question ID : 558101276

Status : Answered

Chosen Option : 4

Q.18 A shopkeeper bought 120 quintals of wheat. 20% of it was sold at 25% loss. At what percent gain should he sell the rest to gain 25% on the whole transaction?

- Ans
- ☒ 1. $36\frac{1}{2}$
 - ☒ 2. 40
 - ☒ 3. $37\frac{1}{2}$
 - ☒ 4. 35

Question ID : 558101282

Status : Answered

Chosen Option : 3

Q.19 The value of $22.\bar{4} + 11.5\bar{67} - 33.5\bar{9}$ is:

- Ans
- ☒ 1. $0.\bar{32}$
 - ☒ 2. $0.4\bar{12}$
 - ☒ 3. $0.3\bar{1}$
 - ☒ 4. $0.4\bar{12}$

Question ID : 558101262

Status : Marked For Review

Chosen Option : 4



Q.20 Anu sold an article for ₹480 at some profit. Had she sold it for ₹400, then there would have been a loss equal to one-third of the initial profit. What was the cost price of the article?

Ans

-  1. ₹450
-  2. ₹430
-  3. ₹425
-  4. ₹420





Question ID : 558101281
Status : Answered
Chosen Option : 4

Q.21 In a school, $\frac{4}{9}$ of the number of students are girls and the rest are boys. $\frac{3}{5}$ of the number of boys are below 12 years of age and $\frac{5}{12}$ of the number of girls are 12 years or above 12 years of age. If the number of students below 12 years of age is 480, then $\frac{5}{18}$ of the total number of students in the school will be equal to:

- Ans**
-  1. 270
 -  2. 315
 -  3. 225
 -  4. 240

Question ID : 558101273
Status : Answered
Chosen Option : 3

Q.22 $\frac{(2 \sin A)(1 + \sin A)}{1 + \sin A + \cos A}$ is equal to:

- Ans**
-  1. $1 + \sin A - \cos A$
 -  2. $1 - \sin A \cos A$
 -  3. $1 + \cos A - \sin A$
 -  4. $1 + \sin A \cos A$

Question ID : 558101344
Status : Answered
Chosen Option : 1

Q.23 A and B can do a piece of work in 6 days and 8 days, respectively. With the help of C, they completed the work in 3 days and earned ₹1,848. What was the share of C?

- Ans**
-  1. ₹231
 -  2. ₹924
 -  3. ₹462
 -  4. ₹693

Question ID : 558101306
Status : Answered
Chosen Option : 1

Q.24 If $x + y + z = 11$, $x^2 + y^2 + z^2 = 133$ and $x^3 + y^3 + z^3 = 881$, then the value of $\sqrt[3]{xyz}$ is:

- Ans**
-  1. -6
 -  2. 6

☒ 3. -8

☒ 4. 8

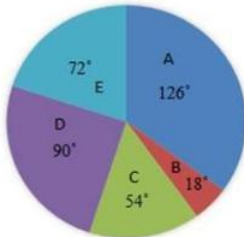
Question ID : 558101324

Status : Answered

Chosen Option : 2

Q.25 The given pie chart shows the breakup of total number of the employees of a company working in different offices (A, B, C, D and E).

Total No. of employees = 2400



What is the number of offices in which the number of employees of the company is between 350 and 650?

Ans ☒ 1. 1

☒ 2. 4

☒ 3. 2

☒ 4. 3

Question ID : 558101353

Status : Answered

Chosen Option : 4

Q.26 Pipes A, B and C can fill a tank in 30 h, 40 h and 60 h respectively. Pipes A, B and C are opened at 7 a.m., 8 a.m., and 10 a.m., respectively on the same day. When will the tank be full?

Ans ☒ 1. 10.00 p.m.

☒ 2. 10.20 p.m.

☒ 3. 9.20 p.m.

☒ 4. 9.40 p.m.

Question ID : 558101305

Status : Answered

Chosen Option : 3

Q.27 If the radius of a right circular cylinder is decreased by 20% while its height is increased by 40%, then the percentage change in its volume will be:

Ans ☒ 1. 1.04% increase

☒ 2. 10.4% decrease

☒ 3. No increase or decrease

☒ 4. 10.4% increase

Question ID : 558101316

Status : Answered

Chosen Option : 2

Q.28

The number of students in a class is 75, out of which $33\frac{1}{3}\%$ are boys and the rest are girls. The average score in mathematics of the boys is $66\frac{2}{3}\%$ more than that of the girls. If the average score of all the students is 66, then the average score of the girls is:

- Ans
- ☒ 1. 52
 - ☒ 2. 55
 - ☒ 3. 54
 - ☒ 4. 58

Question ID : 558101295
Status : Answered
Chosen Option : 3

Q.29 A shopkeeper allows 28% discount on the marked price of an article and still makes a profit of 20%. If he gains ₹30.80 on the sale of one article, then what will be the cost price of the article?

- Ans
- ☒ 1. ₹164
 - ☒ 2. ₹145
 - ☒ 3. ₹160
 - ☒ 4. ₹154

Question ID : 558101284
Status : Answered
Chosen Option : 4

Q.30 In $\triangle ABC$, $\angle A = 52^\circ$ and O is the orthocentre of the triangle (BO and CO meet AC and AB at E and F respectively when produced). If the bisectors of $\angle OBC$ and $\angle OCB$ meet at P , then the measure of $\angle BPC$ is:

- Ans
- ☒ 1. 124°
 - ☒ 2. 132°
 - ☒ 3. 138°
 - ☒ 4. 154°

Question ID : 558101331
Status : Marked For Review
Chosen Option : 4

Q.31 Let a , b and c be the fractions such that $a < b < c$. If c is divided by a , the result is $\frac{5}{2}$, which exceeds b by $\frac{7}{4}$. If $a + b + c = 1\frac{11}{12}$, then $(c - a)$ will be equal to:

- Ans
- ☒ 1. $\frac{1}{3}$
 - ☒ 2. $\frac{2}{3}$
 - ☒ 3. $\frac{1}{6}$
 - ☒ 4. $\frac{1}{2}$

Question ID : 558101266
Status : Answered
Chosen Option : 4

Q.32

The value of $\frac{(253)^3 + (247)^3}{25.3 \times 25.3 - 624.91 + 24.7 \times 24.7}$ is 50×10^k , where the value of k is:

- Ans ☒ 1. 3
☒ 2. 4
☒ 3. 2
☒ 4. -3

Question ID : 558101263

Status : Answered

Chosen Option : 1

Q.33 Travelling at 60 km/h, a person reaches his destination in a certain time. He covers 60% of his journey in $\frac{2}{5}$ th of the time. At what speed (in km/h) should he travel to cover the remaining journey so that he reaches the destination right on time?

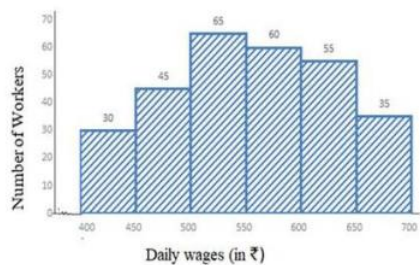
- Ans ☒ 1. 40
☒ 2. 48
☒ 3. 42
☒ 4. 36

Question ID : 558101301

Status : Answered

Chosen Option : 1

Q.34 Study the graph and answer the question that follows.



What is the ratio of the total number of workers whose daily wages are less than ₹500 to the total number of workers whose daily wages are ₹600 and above?

- Ans ☒ 1. 5 : 6
☒ 2. 6 : 7
☒ 3. 3 : 4
☒ 4. 15 : 11

Question ID : 558101352

Status : Answered

Chosen Option : 1





Q.35 The value of $\frac{(\cos 9^\circ + \sin 81^\circ)(\sec 9^\circ + \operatorname{cosec} 81^\circ)}{\sin 56^\circ \sec 34^\circ + \cos 25^\circ \operatorname{cosec} 65^\circ}$ is:

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

 4. $\frac{1}{4}$

Question ID : 558101349
Status : Answered
Chosen Option : 3

Q.36 If $(\sqrt{2} + \sqrt{5} - \sqrt{3}) \times k = -12$, then what will be the value of k ?

- Ans
-  1. $\sqrt{2} + \sqrt{5} + \sqrt{3}$
 -  2. $(\sqrt{2} + \sqrt{5} + \sqrt{3})(2 - \sqrt{10})$
 -  3. $(\sqrt{2} + \sqrt{5} - \sqrt{3})(2 + \sqrt{5})$
 -  4. $(\sqrt{2} + \sqrt{5} + \sqrt{3})(2 - \sqrt{5})$

Question ID : 558101271
Status : Marked For Review
Chosen Option : 4

Q.37 If θ lies in the first quadrant and $\cos^2 \theta - \sin^2 \theta = \frac{1}{2}$, then the value of $\tan^2 2\theta + \sin^2 3\theta$ is:

- Ans
-  1. $\frac{7}{2}$
 -  2. 3
 -  3. 4
 -  4. $\frac{4}{3}$

Question ID : 558101348
Status : Answered
Chosen Option : 3

Q.38 A sum of ₹18,000 is lent at 10% p.a. compound interest, compounded annually. What is the difference between the compound interest for 3rd year and 4th year?

- Ans
-  1. ₹220.60
 -  2. ₹217.80
 -  3. ₹221.80
 -  4. ₹215.40

Question ID : 558101289
Status : Answered
Chosen Option : 3

Q.39 What is the value of $\operatorname{cosec}(65^\circ + \theta) - \sec(25^\circ - \theta) + \tan^2 20^\circ - \operatorname{cosec}^2 70^\circ$?

- Ans
-  1. 0
 -  2. 1
 -  3. 2
 -  4. -1

Question ID : 558101350
Status : Answered
Chosen Option : 4

Q.40 The ratio of the income of A to that of B is 5 : 7. A and B save ₹4,000 and ₹5,000 respectively. If the expenditure of A is equal to $66\frac{2}{3}\%$ of the expenditure of B, then the total income of A and B is:

- Ans
- ☒ 1. ₹25,200
 - ☒ 2. ₹24,000
 - ☒ 3. ₹26,400
 - ☒ 4. ₹28,800

Question ID : 558101292
Status : Answered
Chosen Option : 2

Q.41 In $\triangle ABC$, $AB = 6$ cm, $AC = 8$ cm, and $BC = 9$ cm. The length of median AD is:

- Ans
- ☒ 1. $\frac{\sqrt{317}}{2}$ cm
 - ☒ 2. $\frac{\sqrt{119}}{2}$ cm
 - ☒ 3. $\frac{\sqrt{313}}{2}$ cm
 - ☒ 4. $\frac{\sqrt{115}}{2}$ cm

Question ID : 558101329
Status : Answered
Chosen Option : 2

Q.42 If a nine-digit number $389x6378y$ is divisible by 72, then the value of $\sqrt{6x+7y}$ will be:

- Ans
- ☒ 1. 6
 - ☒ 2. $\sqrt{13}$
 - ☒ 3. $\sqrt{46}$
 - ☒ 4. 8

Question ID : 558101260
Status : Answered
Chosen Option : 4

Q.43
$$\frac{(1 + \cos \theta)^2 + \sin^2 \theta}{(\operatorname{cosec}^2 \theta - 1)\sin^2 \theta} =$$

- Ans
- ☒ 1. $\cos \theta(1 + \sin \theta)$
 - ☒ 2. $2 \cos \theta(1 + \sec \theta)$
 - ☒ 3. $\sec \theta(1 + \sin \theta)$
 - ☒ 4. $2 \sec \theta(1 + \sec \theta)$

Question ID : 558101342
Status : Answered
Chosen Option : 4

Q.44 When 12, 16, 18, 20 and 25 divide the least number x , the remainder in each case is 4 but x is divisible by 7. What is the digit at the thousands' place in x ?

- Ans
- ☐ 1. 5
 - ☒ 2. 8
 - ☐ 3. 4
 - ☐ 4. 3

Question ID : 558101270
Status : Answered
Chosen Option : 2

Q.45 If $(a + b) : (b + c) : (c + a) = 7 : 6 : 5$ and $a + b + c = 27$, then what will be the value of $\frac{1}{a} : \frac{1}{b} : \frac{1}{c}$?

- Ans
- ☐ 1. 3 : 6 : 4
 - ☐ 2. 3 : 2 : 4
 - ☒ 3. 4 : 3 : 6
 - ☐ 4. 3 : 4 : 2

Question ID : 558101291
Status : Answered
Chosen Option : 3

Q.46 PQRS is a cyclic quadrilateral in which $PQ = 14.4$ cm, $QR = 12.8$ cm and $SR = 9.6$ cm. If PR bisects QS, what is the length of PS?

- Ans
- ☐ 1. 15.8 cm
 - ☐ 2. 16.4 cm
 - ☐ 3. 13.6 cm
 - ☒ 4. 19.2 cm

Question ID : 558101337
Status : Not Answered
Chosen Option : --


Q.47 In what ratio, sugar costing ₹60 per kg be mixed with sugar costing ₹42 per kg such that by selling the mixture at ₹56 per kg there is a gain of 12%?


- Ans
- ☐ 1. 5 : 6
 - ☐ 2. 8 : 9
 - ☒ 3. 4 : 5
 - ☐ 4. 5 : 7


Question ID : 558101299
Status : Answered
Chosen Option : 3

Q.48 When an article is sold for ₹355, there is a loss of 29%. To gain 21%, it should be sold for ₹:

- Ans
- ☐ 1. 629.20

 2. 580.80

 3. 605


 4. 635


Question ID : 558101279


Status : Answered


Chosen Option : 3

Q.49 $\left(\frac{1 - \tan \theta}{1 - \cot \theta}\right)^2 + 1 =$

Ans  1. $\operatorname{cosec}^2 \theta$

 2. $\sec^2 \theta$

 3. $\sin^2 \theta$


 4. $\cos^2 \theta$


Question ID : 558101345


Status : Answered


Chosen Option : 2

Q.50 $\sqrt{\frac{\cot \theta + \cos \theta}{\cot \theta - \cos \theta}}$ is equal to:

Ans  1. $\sec \theta + \tan \theta$

 2. $1 + \sec \theta \tan \theta$

 3. $1 - \sec \theta \tan \theta$

 4. $\sec \theta - \tan \theta$

Question ID : 558101341

Status : Answered

Chosen Option : 1

Q.51 If $5 \sin \theta - 4 \cos \theta = 0$, $0^\circ < \theta < 90^\circ$, then the value of $\frac{5 \sin \theta - 2 \cos \theta}{5 \sin \theta + 3 \cos \theta}$ is:

Ans  1. $\frac{3}{8}$

 2. $\frac{3}{7}$

 3. $\frac{2}{7}$

 4. $\frac{5}{8}$

Question ID : 558101347

Status : Answered

Chosen Option : 3

Q.52 If the radius of the base of a cone is doubled, and the volume of the new cone is three times the volume of the original cone, then what will be the ratio of the height of the original cone to that of the new cone?

Ans  1. 1 : 3

✓ 2. 4 : 3

✗ 3. 2 : 9

✗ 4. 9 : 4

Question ID : 558101314

Status : Answered

Chosen Option : 2

Q.53 Abhi rows upstream a distance of 28 km in 4 h and rows downstream a distance of 50 km in 2 h. To row a distance of 44.8 km in still water, he will take:

Ans ✓ 1. 2.8 h

✗ 2. 3.2 h

✗ 3. 2.4 h

✗ 4. 2.2 h

Question ID : 558101302

Status : Answered

Chosen Option : 1

Q.54 A sum of ₹8,400 amounts to ₹11,046 at 8.75% p.a. simple interest in certain time. What is the simple interest on the sum of ₹9,600 at the same rate for the same time?

Ans ✗ 1. ₹2,990

✗ 2. ₹3,012

✗ 3. ₹2,686

✓ 4. ₹3,024

Question ID : 558101286

Status : Answered

Chosen Option : 4

Q.55 If the diameter of the base of a cone is 42 cm and its curved surface area is 2310 cm^2 , then what will be its volume (in cm^3)?

Ans ✗ 1. 25872

✗ 2. 19404

✓ 3. 12936

✗ 4. 38808

Question ID : 558101315

Status : Answered

Chosen Option : 3

Q.56 If a cuboid of dimensions $32 \text{ cm} \times 12 \text{ cm} \times 9 \text{ cm}$ is cut into two cubes of same size, what will be the ratio of the surface area of the cuboid to the total surface area of the two cubes?

Ans ✓ 1. 65 : 72

✗ 2. 37 : 48

✗ 3. 24 : 35

✗ 4. 32 : 39

Question ID : 558101319

Status : **Answered**
Chosen Option : 1

Q.57 When x is added to each of 2, 3, 30 and 35, then the numbers obtained in this order, are in proportion. What is the mean proportional between $(x + 7)$ and $(x - 2)$?

- Ans
- ☐ 1. 7
 - ☐ 2. 4
 - ☒ 3. 6
 - ☐ 4. 5

Question ID : **558101290**
Status : **Answered**
Chosen Option : 3

Q.58 The ratio of investment by A to that by B in a business is 14 : 15 and the ratio of their respective profits at the end of a year is 2 : 5. If A invested the money for 3 months, then for how much time (in months) B invested his money?

- Ans
- ☒ 1. 7
 - ☐ 2. 6
 - ☐ 3. 5
 - ☐ 4. 9

Question ID : **558101297**
Status : **Answered**
Chosen Option : 1

Q.59 In $\triangle ABC$, $AB = 7$ cm, $BC = 10$ cm, and $AC = 8$ cm. If AD is the angle bisector of $\angle BAC$, where D is a point on BC, then BD is equal to:

- Ans
- ☐ 1. $\frac{16}{3}$ cm
 - ☐ 2. $\frac{15}{4}$ cm
 - ☒ 3. $\frac{14}{3}$ cm
 - ☐ 4. $\frac{17}{4}$ cm

Question ID : **558101330**
Status : **Answered**
Chosen Option : 3

Q.60 The base of right prism is a trapezium whose parallel sides are 11 cm and 15 cm and the distance between them is 9 cm. If the volume of the prism is 1731.6 cm^3 , then the height (in cm) of the prism will be:

- Ans
- ☐ 1. 15.6
 - ☐ 2. 15.2
 - ☒ 3. 14.8
 - ☐ 4. 14.2

Question ID : **558101317**
Status : **Answered**
Chosen Option : 3

Q.61 Raghav spends 80% of his income. If his income increases by 12% and the savings decrease by 10%, then what will be the percentage increase in his expenditure?

- Ans
- ☒ 1. 20.5
 - ☒ 2. 16
 - ☒ 3. 17.5
 - ☒ 4. 22

Question ID : 558101275
Status : Answered
Chosen Option : 3

Q.62 The lateral surface area of a cylinder is 352 cm^2 . If its height is 7 cm, then its volume (in cm^3) is:
(Take $\pi = \frac{22}{7}$)

- Ans
- ☒ 1. 1408
 - ☒ 2. 1078
 - ☒ 3. 1243
 - ☒ 4. 891

Question ID : 558101311
Status : Answered
Chosen Option : 1

Q.63 What will be the compound interest on a sum of ₹31,250 for 2 years at 12% p.a., if the interest is compounded 8-monthly?

- Ans
- ☒ 1. ₹8,106
 - ☒ 2. ₹8,116
 - ☒ 3. ₹8,016
 - ☒ 4. ₹8,156

Question ID : 558101288
Status : Answered
Chosen Option : 1



Q.64 When 7897, 8110 and 8536 are divided by the greatest number x , then the remainder in each case is the same. The sum of the digits of x is:

- Ans
- ☒ 1. 14
 - ☒ 2. 5
 - ☒ 3. 9
 - ☒ 4. 6

Question ID : 558101269
Status : Answered
Chosen Option : 4

Q.65 The ratios of copper to zinc in alloys A and B are 3 : 4 and 5 : 9, respectively. A and B are taken in the ratio 2 : 3 and melted to form a new alloy C. What is the ratio of copper to zinc in C?

- Ans
- ☒ 1. 8 : 13
 - ☒ 2. 3 : 5

-  3. 9 : 11
 4. 27 : 43

Question ID : 558101298
Status : Answered
Chosen Option : 4

Q.66 In $\triangle ABC$, D and E are the points on sides AB and BC respectively such that $DE \parallel AC$. If $AD : DB = 5 : 3$, then what is the ratio of the area of $\triangle BDE$ to that of the trapezium ACED?

- Ans  1. 4 : 25
 2. 9 : 55
 3. 9 : 64
 4. 1 : 6





Question ID : 558101334
Status : Answered
Chosen Option : 2

Q.67 One year ago, the ratio of the age (in years) of A to that of B was 4 : 3. The ratio of their respective ages, 3 years from now, will be 6 : 5. What will be the ratio of respective ages of A and B, 9 years from now?

- Ans  1. 7 : 6
 2. 10 : 9
 3. 9 : 8
 4. 8 : 7

Question ID : 558101293
Status : Answered
Chosen Option : 3

Q.68 The sides of a triangle are 11 cm, 60 cm and 61 cm. What is the radius of the circle circumscribing the triangle?

- Ans  1. 31.5 cm
 2. 31 cm
 3. 30 cm
 4. 30.5 cm

Question ID : 558101328
Status : Answered
Chosen Option : 4

Q.69 A sum of ₹5,000 is divided into two parts such that the simple interest on the first part for $4\frac{1}{5}$ years at $6\frac{2}{3}\%$ p.a is double the simple interest on the second part for $2\frac{3}{4}$ years at 4% p.a. What is the difference between the two parts?

- Ans  1. ₹680
 2. ₹600
 3. ₹560
 4. ₹620

Question ID : 558101287
Status : Answered
Chosen Option : 2

Q.70

If $x = \sqrt{1 + \frac{\sqrt{3}}{2}} - \sqrt{1 - \frac{\sqrt{3}}{2}}$, then the value of $\frac{\sqrt{2}-x}{\sqrt{2}+x}$ will be closest to:

Ans

- ✓ 1. 0.17
 ✗ 2. 0.12
 ✗ 3. 1.4
 ✗ 4. 1.2

Question ID : 558101267

Status : Answered

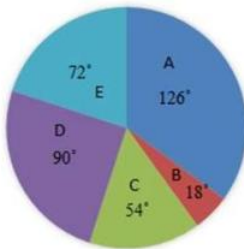
Chosen Option : 1

Q.71

The given pie chart shows the breakup of total number of the employees of a company working in different offices

(A, B, C, D and E).

Total No. of employees = 2400



If the percentage of male employees in office C is 20% and that of female employees in E is 40%, then what is the ratio of the number of female employees in C to that of female employees in E?

Ans

- ✓ 1. 3 : 2
 ✗ 2. 5 : 4
 ✗ 3. 2 : 3
 ✗ 4. 3 : 8

Question ID : 558101354

Status : Answered

Chosen Option : 1

Q.72

In a trapezium ABCD, $DC \parallel AB$, $AB = 12$ cm and $DC = 7.2$ cm. What is the length of the line segment joining the mid-points of its diagonals?

Ans

- ✗ 1. 2.6 cm
 ✗ 2. 4.8 cm
 ✓ 3. 2.4 cm
 ✗ 4. 3.6 cm

Question ID : 558101335

Status : Answered


Chosen Option : 3

Q.73

A number is first increased by 16% and then increased by 14%. The number, so obtained, is now decreased by 30%. What is the net increase or decrease percent in the original number (nearest to an integer)?

Ans

- ✗ 1. 6% increase
 ✓ 2. 7% decrease
 ✗ 3. No increase or decrease

 4. 9% decrease

Question ID : 558101277
Status : Answered
Chosen Option : 2

Q.74 Radha marks her goods 25% above the cost price. She sells 35% of goods at the marked price, 40% at 15% discount and the remaining at 20% discount. What is her overall percentage gain?

- Ans  1. 11.25
 2. 10
 3. 11.75
 4. 12.75

Question ID : 558101283
Status : Answered
Chosen Option : 1

Q.75 Chord AB of a circle is produced to a point P, and C is a point on the circle such that PC is a tangent to the circle. If PC = 18 cm, and BP = 15 cm, then AB is equal to:

- Ans  1. 5.8 cm
 2. 6.2 cm
 3. 6.6 cm
 4. 8.5 cm

Question ID : 558101339
Status : Answered
Chosen Option : 3

Q.76 One of the factors of $(8^{2k} + 5^{2k})$, where k is an odd number, is:

- Ans  1. 86
 2. 88
 3. 84
 4. 89

Question ID : 558101265
Status : Answered
Chosen Option : 4

Q.77 The internal and external radii of a hollow hemispherical vessel are 6 cm and 7 cm respectively. What is the total surface area (in cm^2) of the vessel?

- Ans  1. 183π
 2. 189π
 3. 177π
 4. 174π

Question ID : 558101309
Status : Answered
Chosen Option : 1

Q.78 When the price of an item was reduced by 25%, then its sale was increased by $x\%$. If there is an increase of 20% in the receipt of the revenue, then the value of x will be:

- Ans
- ☒ 1. 50
 - ☒ 2. 60
 - ☒ 3. 45
 - ☒ 4. 75

Question ID : 558101274
Status : Answered
Chosen Option : 2

Q.79 In a constituency, 55% of the total number of voters are males and the rest are females. If 40% of the males are illiterate and 40% of the females are literate, then by what percent is the number of literate males more than that of illiterate females?

- Ans
- ☒ 1. $22\frac{8}{11}$
 - ☒ 2. $18\frac{2}{9}$
 - ☒ 3. $22\frac{2}{9}$
 - ☒ 4. $18\frac{2}{11}$

Question ID : 558101278
Status : Answered
Chosen Option : 3

Q.80 From the top of a tower, the angles of depression of two objects on the ground on the same side of it, are observed to be 60° and 30° respectively and the distance between the objects is $400\sqrt{3}$ m. The height (in m) of the tower is:

- Ans
- ☒ 1. 800
 - ☒ 2. $800\sqrt{3}$
 - ☒ 3. 600
 - ☒ 4. $600\sqrt{3}$

Question ID : 558101351
Status : Answered
Chosen Option : 3

Q.81 A train travelling at the speed of x km/h crossed a 200 m long platform in 30 seconds and overtook a man walking in the same direction at the speed of 6 km/h in 20 seconds. What is the value of x ?

- Ans
- ☒ 1. 50
 - ☒ 2. 54
 - ☒ 3. 56
 - ☒ 4. 60

Question ID : 558101303
Status : Answered
Chosen Option : 4

Q.82 Let $x = (633)^{24} - (277)^{38} + (266)^{54}$. What is the units digit of x ?

- Ans
- ☒ 1. 7
 - ☒ 2. 6
 - ☒ 3. 4
 - ☒ 4. 8

Question ID : 558101259
Status : Answered
Chosen Option : 4

Q.83 Three solid metallic spheres whose radii are 1 cm, x cm and 8 cm, are melted and recast into a single solid sphere of diameter 18 cm. The surface area (in cm^2) of the sphere with radius x cm is:

- Ans
- ☒ 1. 144π
 - ☒ 2. 72π
 - ☒ 3. 64π
 - ☒ 4. 100π

Question ID : 558101310
Status : Answered
Chosen Option : 1

Q.84 The value of $\left(2\frac{6}{7} \text{ of } 4\frac{1}{5} \div \frac{2}{3}\right) \times 1\frac{1}{9} \div \left(\frac{3}{4} \times 2\frac{2}{3} \text{ of } \frac{1}{2} \div \frac{1}{4}\right)$ is:

- Ans
- ☒ 1. 5
 - ☒ 2. 8
 - ☒ 3. $\frac{1}{8}$
 - ☒ 4. $\frac{1}{5}$

Question ID : 558101264
Status : Answered
Chosen Option : 1

Q.85 An article is sold at a certain price. If it is sold at $33\frac{1}{3}\%$ of this price, there is a loss of $33\frac{1}{3}\%$. What is the percentage profit when it is sold at 60% of the original selling price?

- Ans
- ☒ 1. 20
 - ☒ 2. 30
 - ☒ 3. $33\frac{1}{3}$
 - ☒ 4. $17\frac{1}{3}$

Question ID : 558101280
Status : Answered
Chosen Option : 1

Q.86 If $a^3 + b^3 = 218$ and $a + b = 2$, then the value of ab is:

- Ans  1. 34
 2. -35
 3. -31
 4. 32

Question ID : 558101325
Status : Answered
Chosen Option : 2

Q.87 In $\triangle ABC$, $\angle A = 58^\circ$. If I is the incentre of the triangle, then the measure of $\angle BIC$ is:

- Ans  1. 109°
 2. 123°
 3. 112°
 4. 119°





Question ID : 558101332
Status : Answered
Chosen Option : 4

Q.88 If $2\sqrt{2}x^3 - 3\sqrt{3}y^3 = (\sqrt{2}x - \sqrt{3}y)(Ax^2 + By^2 + Cxy)$, then the value of $A^2 + B^2 - C^2$ is:

- Ans  1. 11
 2. 7
 3. 19
 4. 10

Question ID : 558101323
Status : Answered
Chosen Option : 2

Q.89 A circle is inscribed in $\triangle ABC$, touching AB, BC and AC at the points P, Q and R respectively. If $AB - BC = 4$ cm, $AB - AC = 2$ cm and the perimeter of $\triangle ABC = 32$ cm, then $PB + AR$ is equal to:

- Ans  1. 12 cm
 2. 13 cm
 3. $\frac{33}{5}$ cm
 4. $\frac{38}{3}$ cm

Question ID : 558101338
Status : Marked For Review
Chosen Option : 4

Q.90 If each interior angle of a regular polygon is $\left(128\frac{4}{7}\right)^\circ$, then what is the sum of the number of its diagonals and the number of its sides?

- Ans  1. 15
 2. 19
 3. 17
 4. 21

Question ID : 558101333

Status : Answered

Chosen Option : 4

Q.91 If the radius of a sphere is increased by 4 cm, its surface area is increased by $464\pi \text{ cm}^2$. What is the volume (in cm^3) of the original sphere?

Ans

☒ 1. $\frac{15625}{6}\pi$

☐ 2. $\frac{35937}{8}\pi$

☐ 3. $\frac{11979}{2}\pi$

☐ 4. $\frac{15625}{8}\pi$

Question ID : 558101318

Status : Answered

Chosen Option : 1

Q.92 The sum of the digits of a two-digit number is $\frac{1}{2}$ of the number. The units digit is 4 less than the tens digit. If the number obtained on reversing its digits is divided by 7, the remainder will be:

Ans

☐ 1. 4

☐ 2. 5

☐ 3. 1

☒ 4. 6

Question ID : 558101272

Status : Answered

Chosen Option : 4

Q.93 The graph of the equation $x - 7y = -42$, intersects the y-axis at $P(\alpha, \beta)$ and the graph of $6x + y - 15 = 0$, intersects the x-axis at $Q(\gamma, \delta)$. What is the value of $\alpha + \beta + \gamma + \delta$?

Ans

☒ 1. $\frac{17}{2}$

☐ 2. 6

☐ 3. $\frac{9}{2}$

☐ 4. 5

Question ID : 558101321

Status : Answered

Chosen Option : 1

Q.94 In quadrilateral ABCD, the bisectors of $\angle A$ and $\angle B$ meet at O and $\angle AOB = 64^\circ$. $\angle C + \angle D$ is equal to:

Ans

☐ 1. 136°

☒ 2. 128°

☐ 3. 116°

☐ 4. 148°

Question ID : 558101340

Status : Answered

Q.95 'A' started a business with a capital of ₹54,000 and admitted 'B' and 'C' after 4 months and 6 months, respectively. At the end of the year, the profit was divided in the ratio 1 : 4 : 5. What is the difference between the capitals invested by 'B' and 'C'?

- Ans
- ☒ 1. ₹1,08,000
 - ☒ 2. ₹1,62,000
 - ☒ 3. ₹2,16,000
 - ☒ 4. ₹3,24,000

Question ID : 558101296

Status : Answered

Chosen Option : 3

Q.96 A and B started their journeys from X to Y and Y to X, respectively. After crossing each other, A and B completed the remaining parts of their journeys in $6\frac{1}{8}$ h and 8 h respectively. If the speed of B is 28 km/h, then the speed (in km/h) of A is:

- Ans
- ☒ 1. 40
 - ☒ 2. 42
 - ☒ 3. 32
 - ☒ 4. 36

Question ID : 558101300

Status : Answered

Chosen Option : 3

Q.97 The given pie chart shows the breakup of total number of the employees of a company working in different offices (A, B, C, D and E).
Total No. of employees = 2400



If 40% of the number of employees in office A are shifted equally to office B and E, then what is the difference between the number of employees in B and that in C?

- Ans
- ☒ 1. 72
 - ☒ 2. 120
 - ☒ 3. 82
 - ☒ 4. 130

Question ID : 558101355

Status : Answered

Chosen Option : 1

Q.98 The volume of a right pyramid is $45\sqrt{3}\text{cm}^3$ and its base is an equilateral triangle with side 6 cm. What is the height (in cm) of the pyramid?

- Ans
- ☒ 1. 15
 - ☒ 2. 18

☒ 3. 12

☒ 4. 20

Question ID : 558101308

Status : Answered

Chosen Option : 1

Q.99 A certain number of persons can complete a work in 34 days working 9 h a day. If the number of persons is decreased by 40%, then how many hours a day should the remaining persons work to complete the work in 51 days?

Ans ☒ 1. 9

☒ 2. 8

☒ 3. 12

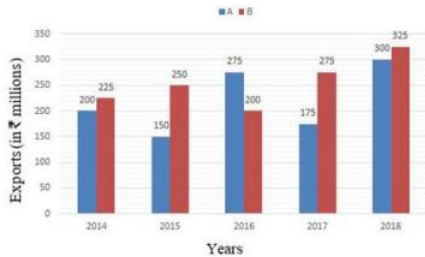
☒ 4. 10

Question ID : 558101307

Status : Answered

Chosen Option : 4

Q.100 The bar graph shows the exports of Cars of Type A and B (in ₹ millions).



The total exports of cars of type A in 2014 to 2017 is approximately what percentage less than the total exports of cars of type B in 2015 to 2018?

Ans ☒ 1. 31.3

☒ 2. 30.4

☒ 3. 14.3

☒ 4. 23.8

Question ID : 558101357

Status : Answered

Chosen Option : 4

Combined Graduate Level Examination (Tier-II), 2018

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

Section : Quantitative abilities

Q.1 Two-third of the number of employees of a company are males and the rest are females. If $\frac{3}{8}$ of the male employees and $\frac{2}{5}$ of the female employees are temporary employees and the total number of permanent employees is 740, then $\frac{7}{15}$ of the total number of employees exceeds the number of temporary female employees by:

- Ans**
- ☒ 1. 400
 - ☐ 2. 340
 - ☐ 3. 308
 - ☐ 4. 320

Question ID : 558101373

Status : Answered

Chosen Option : 1

Q.2 Three fractions, x , y and z , are such that $x > y > z$. When the smallest of them is divided by the greatest, the result is $\frac{9}{16}$, which exceeds y by 0.0625. If $x + y + z = 1\frac{13}{24}$, then the value of $x + z$ is:

- Ans**
- ☐ 1. $\frac{7}{8}$
 - ☐ 2. 1
 - ☒ 3. $\frac{25}{24}$
 - ☐ 4. $\frac{7}{6}$

Question ID : 558101366

Status : Answered

Chosen Option : 3

Q.3 If the 11-digit number $5678x43267y$ is divisible by 72, then the value of $\sqrt{5x + 8y}$ is:

- Ans**
- ☒ 1. 6
 - ☐ 2. 4
 - ☐ 3. 7
 - ☐ 4. 8

Question ID : 558101360

Status : Answered

Chosen Option : 1

Q.4

What is the ratio of the third proportional to 0.4 and 0.8, to the mean proportional between 13.5 and 0.24?

- Ans
- ☒ 1. 5 : 4
 - ☒ 2. 7 : 8
 - ☒ 3. 8 : 9
 - ☒ 4. 9 : 10

Question ID : 558101391

Status : Not Answered

Chosen Option : --

Q.5 If $x + \frac{1}{16x} = 3$, then the value of $16x^3 + \frac{1}{256x^3}$ is:

- Ans
- ☒ 1. 423
 - ☒ 2. 441
 - ☒ 3. 432
 - ☒ 4. 414

Question ID : 558101425

Status : Answered

Chosen Option : 1

Q.6 If 60% of a number is 120 more than 20% of the number, then 28% of the number is less than $33\frac{1}{3}\%$ of the number by:

- Ans
- ☒ 1. 14
 - ☒ 2. 12
 - ☒ 3. 16
 - ☒ 4. 15

Question ID : 558101378

Status : Answered

Chosen Option : 3

Q.7 A sum lent out at simple interest amounts to ₹6076 in 1 year and ₹7504 in 4 years. The sum and the rate of interest p.a. are respectively:

- Ans
- ☒ 1. ₹5,600 and 9%
 - ☒ 2. ₹5,600 and 8.5%
 - ☒ 3. ₹5,400 and 9%
 - ☒ 4. ₹5,400 and 10%

Question ID : 558101387

Status : Answered

Chosen Option : 2

Q.8 In $\triangle ABC$, the medians AD, BE and CF meet at O. What is the ratio of the area of $\triangle ABD$ to the area of $\triangle AOE$?

- Ans
- ☒ 1. 2 : 1
 - ☒ 2. 3 : 1
 - ☒ 3. 5 : 2
 - ☒ 4. 3 : 2

Question ID : 558101428

Status : Answered

Chosen Option : 2

Q.9 If $x + y + z = 2$, $xy + yz + zx = -11$ and $xyz = -12$, then what is the value of $\sqrt{x^3 + y^3 + z^3 - 2}$?

- Ans ☒ 1. 6
☐ 2. 12
☐ 3. 9
☐ 4. 8

Question ID : 558101426

Status : Answered

Chosen Option : 1

Q.10 The value of $\left(1\frac{1}{3} \div 2\frac{6}{7} \text{ of } 5\frac{3}{5}\right) \div \left(6\frac{2}{5} \div 4\frac{1}{2} \text{ of } 5\frac{1}{3}\right) \times \left(\frac{3}{4} \times 2\frac{2}{3} \div \frac{5}{9} \text{ of } 1\frac{1}{5}\right) = 1 + k$, where k lies between:

- Ans ☒ 1. -0.07 and -0.06
☐ 2. -0.08 and -0.07
☐ 3. -0.06 and -0.05
☐ 4. -0.05 and -0.04

Question ID : 558101363

Status : Not Answered

Chosen Option : --

Q.11 5 years ago, the ratio of the age of A to that of B was 4 : 5. Five years hence, the ratio of the age of A to that of B will be 6 : 7. If, at present, C is 10 years younger than B, then what will be the ratio of the present age of A to that of C?

- Ans ☐ 1. 3 : 2
☒ 2. 5 : 4
☐ 3. 4 : 3
☐ 4. 5 : 3

Question ID : 558101393

Status : Not Answered

Chosen Option : --

Q.12 The area of the base of a right circular cone is 400π and its height is 15 cm. The curved surface area of the cone (in cm^2) is:

- Ans ☐ 1. 480π
☒ 2. 500π
☐ 3. 450π
☐ 4. 560π

Question ID : 558101415

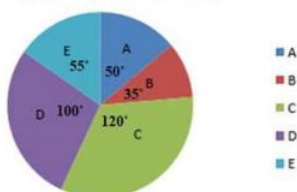
Status : Answered

Chosen Option : 2

Q.13

The given pie chart shows the quantity wise sales distribution of five products (A, B, C, D and E) of a company in 2016.

Quantity wise sales distribution of five products (A, B, C, D and E)



If 1500 units of product D were sold in 2016 and the total number of units sold by the company in 2017 was 18% more than that sold in 2016, then the total units sold by the company in 2017 is:

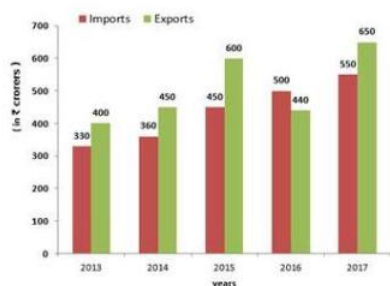
- Ans
1. 6336
 2. 6390
 3. 6372
 4. 6354

Question ID : 558101453

Status : Answered

Chosen Option : 3

Q.14 The given bar graph shows the imports and exports (in ₹ crores) of steel by a country from 2013 to 2017.



What is the ratio of the total imports in 2015 and 2017 to the total exports in 2013 and 2016?

- Ans
1. 11 : 4
 2. 9 : 8
 3. 25 : 21
 4. 9 : 11

Question ID : 558101457

Status : Answered

Chosen Option : 3

Q.15 An article is sold at a certain price. If it is sold at 80% of this price, then there will be a loss of 10%. What is the percentage profit when the article is sold at the original selling price?

- Ans
1. $15\frac{1}{2}$
 2. $12\frac{1}{2}$
 3. 15
 4. 12

Question ID : 558101380

Status : Answered

Chosen Option : 2

Q.16 In a circle, AB and DC are two chords. When AB and DC are produced, they meet at P. If PC = 5.6 cm, PB = 6.3 cm and AB = 7.7 cm, then the length of CD is:

- Ans
- ☒ 1. 8.35 cm
 - ☒ 2. 9 cm
 - ☒ 3. 10.15 cm
 - ☒ 4. 9.25 cm

Question ID : 558101439

Status : Answered

Chosen Option : 3

Q.17

The value of $\left(\frac{\sin A}{1-\cos A} + \frac{1-\cos A}{\sin A}\right) \div \left(\frac{\cot^2 A}{1+\operatorname{cosec} A} + 1\right)$ is:

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

Question ID : 558101445

Status : Marked For Review

Chosen Option : 3

Q.18 A is 25% more than B and B is 40% less than C. If C is 30% more than D, then by what percent is A less than D?

- Ans
- ☒ 1. 1.5
 - ☒ 2. 2.5
 - ☒ 3. 4
 - ☒ 4. 5

Question ID : 558101376

Status : Answered

Chosen Option : 2

Q.19 In a class, $83\frac{1}{3}\%$ of the number of students are girls and the rest are boys. If 60% of the number of boys and 80% of the number of girls are present, then what percentage of the total number of students in the class is absent?

- Ans
- ☒ 1. $26\frac{2}{3}$
 - ☒ 2. $22\frac{2}{3}$
 - ☒ 3. $23\frac{1}{3}$
 - ☒ 4. $12\frac{1}{3}$

Question ID : 558101374

Status : Answered

Chosen Option : 3

Q.20

A spends 65% of his income. His income is increased by 20.1% and his expenditure is increased by 25%. His savings:

Ans

- ☒ 1. Increase by 11%
- ☐ 2. Increase by 5%
- ☐ 3. Decrease by 5%
- ☐ 4. Decrease by 11%

Question ID : 558101375

Status : Answered

Chosen Option : 1

Q.21 The average weight of a certain number of students in a group is 72 kg. If 10 students having an average weight of 78 kg leave and 4 students having an average weight of 80 kg join the group, the average weight of the students in the group decreases by 0.7 kg. The number of students initially in the group is:

Ans

- ☐ 1. 56
- ☒ 2. 46
- ☐ 3. 44
- ☐ 4. 54

Question ID : 558101394

Status : Answered

Chosen Option : 2

Q.22 If $\frac{1+\sin\theta}{1-\sin\theta} = \frac{p^2}{q^2}$, then $\sec\theta$ is equal to:

Ans

- ☐ 1. $\frac{2p^2q^2}{p^2+q^2}$
- ☒ 2. $\frac{1}{2} \left(\frac{q}{p} + \frac{p}{q} \right)$
- ☐ 3. $\frac{1}{p^2} + \frac{1}{q^2}$
- ☐ 4. $\frac{p^2q^2}{p^2+q^2}$

Question ID : 558101447

Status : Answered

Chosen Option : 1

Q.23 The marked price of an article is ₹800 and it is sold at a discount of 19%. If there is a gain of 8%, then by what percent above the cost price was the article marked?

Ans

- ☒ 1. $33\frac{1}{3}$
- ☐ 2. 35
- ☐ 3. 27
- ☐ 4. $36\frac{2}{3}$

Question ID : 558101384

Status : Not Answered

Chosen Option : --

Q.24 The base of a right prism is a triangle with sides 20 cm, 21 cm and 29 cm. If its volume is 7560 cm^3 , then its lateral surface area (in cm^2) is:

- Ans
- ☒ 1. 2484
 - ☒ 2. 2556
 - ☒ 3. 2520
 - ☒ 4. 2448

Question ID : 558101417

Status : Answered

Chosen Option : 3

Q.25 The expression $\sqrt{10 + 2(\sqrt{6} - \sqrt{15} - \sqrt{10})}$ is equal to:

- Ans
- ☒ 1. $\sqrt{3} + \sqrt{2} - \sqrt{5}$
 - ☒ 2. $\sqrt{3} - \sqrt{2} - \sqrt{5}$
 - ☒ 3. $\sqrt{3} - \sqrt{2} + \sqrt{5}$
 - ☒ 4. $\sqrt{2} - \sqrt{3} - \sqrt{5}$

Question ID : 558101371

Status : Answered

Chosen Option : 1

Q.26 A cylindrical vessel of radius 3.5 m is full of water. If 15400 litres of water is taken out from it, then the drop in the water level in the vessel will be:

- Ans
- ☒ 1. 72 cm
 - ☒ 2. 40 cm
 - ☒ 3. 35 cm
 - ☒ 4. 60 cm

Question ID : 558101416

Status : Answered

Chosen Option : 2

Q.27 The value of $\frac{\sec\theta(1-\sin\theta)(\sin\theta+\cos\theta)(\sec\theta+\tan\theta)}{\sin\theta(1+\tan\theta)+\cos\theta(1+\cot\theta)}$ is equal to:

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

Question ID : 558101442

Status : Not Answered

Chosen Option : --

Q.28 A, B and C start a business. A invests $33\frac{1}{3}\%$ of the total capital, B invests 25% of the remaining and C invests the rest. If the total profit at the end of a year is ₹1,62,000, then A's share in profit is:

- Ans
- ☒ 1. ₹81,000
 - ☒ 2. ₹60,000
 - ☒ 3. ₹54,000
 - ☒ 4. ₹90,000

Question ID : 558101395
Status : Answered
Chosen Option : 3

Q.29 A solid metallic sphere of radius 8 cm is melted and drawn into a wire of uniform cross-section. If the length of the wire is 24 m, then its radius (in mm) is:

- Ans
- ☒ 1. 6
 - ☒ 2. 5
 - ☒ 3. $5\frac{1}{3}$
 - ☒ 4. $6\frac{2}{3}$

Question ID : 558101418
Status : Answered
Chosen Option : 3

Q.30 The sides of a triangle are 56 cm, 90 cm and 106 cm. The circumference of its circumcircle is:

- Ans
- ☒ 1. 106π
 - ☒ 2. 109π
 - ☒ 3. 108π
 - ☒ 4. 112π

Question ID : 558101429
Status : Answered
Chosen Option : 1

Q.31 The speed of a boat in still water is 18 km/h and the speed of the current is 6 km/h. In how much time (in hours) will the boat travel a distance of 90 km upstream and the same distance downstream?

- Ans
- ☒ 1. $9\frac{1}{2}$
 - ☒ 2. $11\frac{1}{4}$
 - ☒ 3. 12
 - ☒ 4. 10

Question ID : 558101400
Status : Answered
Chosen Option : 2

Q.32 The HCF of two numbers is 21 and their LCM is 221 times the HCF. If one of the numbers lies between 200 and 300, then the sum of the digits of the other number is:

- Ans
- ☒ 1. 14
 - ☒ 2. 17

 3. 18

 4. 15

Question ID : 558101369


Status : Marked For Review


Chosen Option : 3


Q.33 $\triangle ABC$ and $\triangle DBC$ are on the same base BC but on opposite sides of it. AD and BC intersect each other at O .


If $AO = a$ cm, $DO = b$ cm and the area of $\triangle ABC = x$ cm², then what is the area (in cm²) of $\triangle DBC$?

Ans

 1. $\frac{a}{b}x$

 2. $\frac{ab}{2}x$

 3. $\frac{bx}{a}$

 4. $\frac{(a+b)}{2}x$

Question ID : 558101435

Status : Answered

Chosen Option : 3

Q.34 The value of $\tan^2 \theta + \cot^2 \theta - \sec^2 \theta \operatorname{cosec}^2 \theta$ is equal to:

Ans

 1. -2

 2. 1

 3. 0

 4. -1


Question ID : 558101444

Status : Answered

Chosen Option : 4

Q.35 The point of intersection of the graphs of the equations $3x - 5y = 19$ and $3y - 7x + 1 = 0$ is $P(\alpha, \beta)$. What is the value of $(3\alpha - \beta)$?

Ans

 1. -2

 2. -1

 3. 1

 4. 0


Question ID : 558101420


Status : Answered


Chosen Option : 2

Q.36 $(\sec \theta - \tan \theta)^2 (1 + \sin \theta)^2 \div \sin^2 \theta = ?$

Ans

 1. $\cos \theta$

 2. $\cot^2 \theta$

 3. $\sec \theta$


 4. $\cos^2 \emptyset$

Question ID : 558101441

Status : **Marked For Review**

Chosen Option : 2

Q.37 By selling two articles for ₹800, a person gains the cost price of three articles. The profit percent is:

- Ans
-  1. 125
 -  2. 140
 -  3. 120
 -  4. 150

Question ID : 558101381

Status : **Marked For Review**

Chosen Option : 4

Q.38 What is the compound interest on a sum of ₹7200 for $2\frac{2}{5}$ years at 20% p.a., interest compounded yearly (nearest to an integer)?

- Ans
-  1. ₹4,290
 -  2. ₹3,960
 -  3. ₹4,205
 -  4. ₹3,997

Question ID : 558101388

Status : **Answered**

Chosen Option : 4

Q.39 The value of $\frac{(0.545)(0.081)(0.51)(5.2)}{(0.324)^3 + (0.221)^3 - (0.545)^3}$ is:

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

Question ID : 558101364

Status : **Not Answered**

Chosen Option : --

Q.40 The base of a right pyramid is an equilateral triangle with side 8 cm, and the height of the pyramid is $24\sqrt{3}$ cm. The volume (in cm^3) of the pyramid is:

- Ans
-  1. 1152
 -  2. 480
 -  3. 576
 -  4. 384

Question ID : 558101408

Status : **Answered**

Chosen Option : 4

Q.41 The sum of the interior angles of a regular polygon is 1260° . What is the difference between an exterior angle and an interior angle of the polygon?

- Ans
- ☒ 1. 105°
 - ☒ 2. 100°
 - ☒ 3. 120°
 - ☒ 4. 90°

Question ID : 558101433

Status : Answered

Chosen Option : 2

Q.42 In a circle with centre O, AC and BD are two chords. AC and BD meet at E when produced. If AB is the diameter and $\angle AEB = 68^\circ$, then the measure of $\angle DOC$ is:

- Ans
- ☒ 1. 32°
 - ☒ 2. 30°
 - ☒ 3. 22°
 - ☒ 4. 44°

Question ID : 558101440

Status : Marked For Review

Chosen Option : 3

Q.43 In $\triangle ABC$, the perpendiculars drawn from A, B and C meet the opposite sides at D, E and F, respectively. AD, BE and CF intersect at point P. If $\angle EPD = 116^\circ$ and the bisectors of $\angle A$ and $\angle B$ meet at Q, then the measure of $\angle AQB$ is:

- Ans
- ☒ 1. 96°
 - ☒ 2. 122°
 - ☒ 3. 124°
 - ☒ 4. 64°

Question ID : 558101431

Status : Answered

Chosen Option : 2

Q.44 The perimeters of two similar triangles ABC and PQR are 78 cm and 46.8 cm, respectively. If PQ = 11.7, then the length of AB is:

- Ans
- ☒ 1. 19.5 cm
 - ☒ 2. 23.4 cm
 - ☒ 3. 24 cm
 - ☒ 4. 20 cm


Question ID : 558101436


Status : Answered

Chosen Option : 1

Q.45 If the diameter of the base of a right circular cylinder is reduced by $33\frac{1}{3}\%$ and its height is doubled, then the volume of the cylinder will:

- Ans
- ☒ 1. increase by $1\frac{1}{9}\%$
 - ☒ 2. remain unchanged

 3. increase by $11\frac{1}{9}\%$

 4. decrease by $11\frac{1}{9}\%$


Question ID : 558101412


Status : Answered


Chosen Option : 4

Q.46 A right circular solid cone of radius 3.2 cm and height 7.2 cm is melted and recast into a right circular cylinder of height 9.6 cm. What is the diameter of the base of the cylinder?

Ans  1. 4.2 cm

 2. 4.5 cm

 3. 3.5 cm

 4. 3.2 cm

Question ID : 558101414

Status : Answered


Chosen Option : 4

Q.47 40 litres of 60% concentration of acid solution is added to 35 litres of 80% concentration of acid solution. What is the concentration of acid in the new solution?

Ans  1. 66%

 2. $66\frac{2}{3}\%$

 3. $69\frac{1}{3}\%$

 4. 69%

Question ID : 558101398

Status : Answered

Chosen Option : 3

Q.48 In ΔPQR , I is the incentre of the triangle. If $\angle QIR = 107^\circ$, then what is the measure of $\angle P$?

Ans  1. 37°

 2. 43°

 3. 73°

 4. 34°

Question ID : 558101432

Status : Answered


Chosen Option : 4

Q.49 If $x^4 - 83x^2 + 1 = 0$, then a value of $x^3 - x^{-3}$ can be:

Ans  1. 758

 2. 756

 3. 739

 4. 737

Question ID : 558101422

Status : **Answered**
Chosen Option : **2**

Q.50 Sujata marks an article 36% above the cost price and allows a 40% discount on the marked price. The loss percentage is:

- Ans
- ☒ 1. 15
 - ☒ 2. 16.8
 - ☒ 3. 18.4
 - ☒ 4. 4

Question ID : **558101383**
Status : **Answered**
Chosen Option : **3**

Q.51 If $3(\cot^2 \theta - \cos^2 \theta) = \cos^2 \theta$, $0^\circ < \theta < 90^\circ$, then the value of $(\tan^2 \theta + \operatorname{cosec}^2 \theta + \sin^2 \theta)$ is:

- Ans
- ☒ 1. $\frac{13}{3}$
 - ☒ 2. $\frac{61}{12}$
 - ☒ 3. $\frac{25}{12}$
 - ☒ 4. $\frac{15}{4}$

Question ID : **558101448**
Status : **Answered**
Chosen Option : **2**

Q.52 A hemispherical bowl of internal diameter 36 cm is full of a liquid. This liquid is to be filled into cylindrical bottles each of radius 3 cm and height 12 cm. How many such bottles are required to empty the bowl?

- Ans
- ☒ 1. 72
 - ☒ 2. 54
 - ☒ 3. 36
 - ☒ 4. 27

Question ID : **558101409**
Status : **Answered**
Chosen Option : **3**





Q.53 If $(5x + 1)^3 + (x - 3)^3 + 8(3x - 4)^3 = 6(5x + 1)(x - 3)(3x - 4)$, then x is equal to:

- Ans
- ☒ 1. $\frac{5}{6}$
 - ☒ 2. $\frac{1}{3}$
 - ☒ 3. $\frac{2}{3}$
 - ☒ 4. $\frac{3}{4}$

Question ID : **558101424**

Status : **Answered**
Chosen Option : 1

Q.54 The average of 33 numbers is 74. The average of the first 17 numbers is 72.8 and that of the last 17 numbers is 77.2. If the 17th number is excluded, then what will be the average of the remaining numbers (correct to one decimal place)?

- Ans  1. 72.9
 2. 73.4
 3. 71.6
 4. 70.8





Question ID : **558101397**
Status : **Marked For Review**
Chosen Option : 1

Q.55 A solid cube is cut into three cuboids of same volumes. What is the ratio of the surface area of the cube to the sum of the surface areas of any two of the cuboids so formed?

- Ans  1. 9 : 10
 2. 27 : 16
 3. 27 : 10
 4. 9 : 8

Question ID : **558101419**
Status : **Answered**
Chosen Option : 4

Q.56 If $\frac{\sin^2 \theta - 3 \sin \theta + 2}{\cos^2 \theta} = 1$, where $0^\circ < \theta < 90^\circ$, then what is the value of $(\cos 2\theta + \sin 3\theta + \operatorname{cosec} 2\theta)$?

- Ans  1. $\frac{2+\sqrt{3}}{3}$
 2. $\frac{3+4\sqrt{3}}{6}$
 3. $\frac{9+4\sqrt{3}}{6}$
 4. $\frac{3+2\sqrt{3}}{3}$

Question ID : **558101446**
Status : **Not Answered**
Chosen Option : --

Q.57 A loan has to be returned in two equal yearly instalments each of ₹44,100. If the rate of interest is 5% p.a., compounded annually, then the total interest paid is:

- Ans  1. ₹5,840
 2. ₹6,000
 3. ₹6,200
 4. ₹6,280

Question ID : **558101389**
Status : **Answered**

Q.58 A sum of ₹x is divided among A, B and C such that the ratio of the shares of A and B is 6 : 7 and that of B and C is 3 : 2. If the difference between the shares of A and C is ₹540, then the value of x is:

- Ans
- ☒ 1. 7425
 - ☒ 2. 7020
 - ☒ 3. 7155
 - ☒ 4. 7290

Question ID : 558101392

Status : Answered

Chosen Option : 3

Q.59 The sides PQ and PR of ΔPQR are produced to points S and T, respectively. The bisectors of $\angle SQR$ and $\angle TRQ$ meet at U. If $\angle QUR = 79^\circ$, then the measure of $\angle P$ is:

- Ans
- ☒ 1. 41°
 - ☒ 2. 49°
 - ☒ 3. 22°
 - ☒ 4. 23°

Question ID : 558101427

Status : Answered

Chosen Option : 3

Q.60 The value of $\frac{\sin(78^\circ + \theta) - \cos(12^\circ - \theta) + (\tan^2 70^\circ - \operatorname{cosec}^2 20^\circ)}{\sin 25^\circ \cos 65^\circ + \cos 25^\circ \sin 65^\circ}$ is:

- Ans
- ☒ 1. 2
 - ☒ 2. -1
 - ☒ 3. -2
 - ☒ 4. 0

Question ID : 558101449

Status : Answered

Chosen Option : 2

Q.61 Alloy A contains copper and zinc in the ratio of 4 : 3 and alloy B contains copper and zinc in the ratio of 5 : 2. A and B are taken in the ratio of 5 : 6 and melted to form a new alloy. The percentage of zinc in the new alloy is closest to:

- Ans
- ☒ 1. 54
 - ☒ 2. 34.2
 - ☒ 3. 36.8
 - ☒ 4. 35

Question ID : 558101399

Status : Answered

Chosen Option : 4

Q.62 If the price of petrol increases by 19%, and Sunitha intends to spend only an additional 12% on petrol, by what percent should she reduce the quantity of petrol purchased (nearest to an integer)?

- Ans
- ☒ 1. 7

✓ 2. 6

✗ 3. 5

✗ 4. 8

Question ID : 558101377

Status : Marked For Review

Chosen Option : 2

Q.63

The value of $\sqrt{\frac{\operatorname{cosec}\theta - \cot\theta}{\operatorname{cosec}\theta + \cot\theta}} \div \frac{\sin\theta}{1 + \cos\theta}$ is equal to:

Ans ✗ 1. $\operatorname{cosec}\theta$

✗ 2. $\frac{1}{2}$

✗ 3. $\sec\theta$

✓ 4. 1

Question ID : 558101443

Status : Answered

Chosen Option : 4

Q.64 A, B and C invested their capitals in the ratio of 2 : 3 : 5. The ratio of months for which A, B and C invested is 4 : 2 : 3. If C gets a share of profit which is ₹1,47,000 more than that of A, then B's share of profit is:

Ans ✓ 1. ₹1,26,000

✗ 2. ₹1,68,000

✗ 3. ₹1,05,000

✗ 4. ₹1,89,000

Question ID : 558101396

Status : Answered

Chosen Option : 1

Q.65 In a quadrilateral ABCD, the bisectors of $\angle C$ and $\angle D$ meet at E. If $\angle CED = 56^\circ$ and $\angle A = 49^\circ$, then the measure of $\angle B$ is:

Ans ✗ 1. 71°

✗ 2. 54°

✓ 3. 63°

✗ 4. 67°

Question ID : 558101437

Status : Answered

Chosen Option : 3

Q.66 If $8x^3 - 27y^3 = (Ax + By)(Cx^2 - Dy^2 + 6xy)$, then $(A + B + C - D)$ is equal to:

Ans ✗ 1. -12

✓ 2. 12

✗ 3. 15

~~X~~ 4. 9

Question ID : 558101423

Status : Answered

Chosen Option : 2

Q.67 The number of factors of 3600 is:

Ans ☒ 1. 45

~~X~~ 2. 44

~~X~~ 3. 43

~~X~~ 4. 42

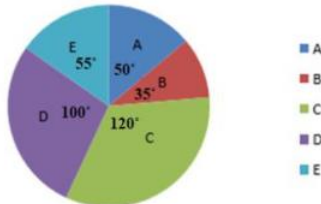
Question ID : 558101365

Status : Answered

Chosen Option : 1

Q.68 The given pie chart shows the quantity wise sales distribution of five products (A, B, C, D and E) of a company in 2016.

Quantity wise sales distribution of five products (A, B, C, D and E)



If 320 units of product A were sold by the company, then how many units of products B and E together were sold by the company?

Ans ~~X~~ 1. 567

☒ 2. 576

~~X~~ 3. 512

~~X~~ 4. 640

Question ID : 558101454

Status : Answered

Chosen Option : 2

Q.69 4 men and 5 women can complete a work in 15 days, whereas 9 men and 6 women can do it in 10 days. To complete the same work in 7 days, how many women should assist 4 men?

Ans ~~X~~ 1. 11

~~X~~ 2. 14

~~X~~ 3. 12

☒ 4. 13

Question ID : 558101405

Status : Answered

Chosen Option : 4

Q.70 If $x = (164)^{169} + (333)^{337} - (727)^{726}$, then what is the units digit of x ?

Ans ~~X~~ 1. 5

- ☒ 2. 7
- ☒ 3. 8
- ☒ 4. 9

Question ID : 558101359
Status : Answered
Chosen Option : 3

Q.71 Pipes A and B can fill a tank in 16 hours and 24 hours, respectively, and pipe C alone can empty the full tank in x hours. All the pipes were opened together at 10:30 a.m., but C was closed at 2:30 p.m. If the tank was full at 8:30 p.m. on the same day, then what is the value of x ?

- Ans** ☒ 1. 64
- ☒ 2. 48
- ☒ 3. 45
- ☒ 4. 96

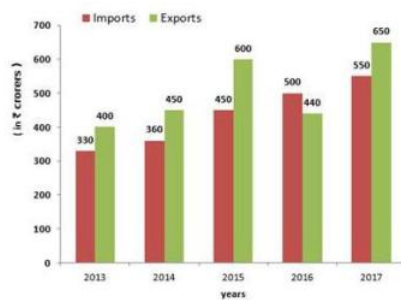
Question ID : 558101404
Status : Answered
Chosen Option : 4

Q.72 Let x be the least number which when divided by 15, 18, 20 and 27, the remainder in each case is 10 and x is a multiple of 31. What least number should be added to x to make it a perfect square?

- Ans** ☒ 1. 39
- ☒ 2. 37
- ☒ 3. 43
- ☒ 4. 36

Question ID : 558101370
Status : Answered
Chosen Option : 1

Q.73 The given bar graph shows the imports and exports (in ₹ crores) of steel by a country from 2013 to 2017.



The total imports of steel in 2014, 2016 and 2017 is what percent less than the total exports in 2013, 2015 and 2017 (correct to one decimal place)?

- Ans** ☒ 1. 13.4
- ☒ 2. 15.8
- ☒ 3. 16.2
- ☒ 4. 14.5

Question ID : 558101458
Status : Answered
Chosen Option : 4

Q.74 A person sells an article at 16% below its cost price. Had he sold it for ₹33 more, he would have gained 14%. To gain 25%, he should sell the article for:

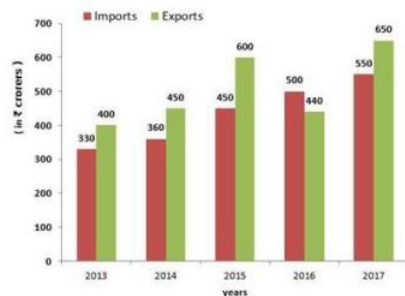
- Ans
- ☒ 1. ₹128
 - ☒ 2. ₹137.5
 - ☒ 3. ₹135
 - ☒ 4. ₹130.5

Question ID : 558101379

Status : Answered

Chosen Option : 2

Q.75 The given bar graph shows the imports and exports (in ₹ crores) of steel by a country from 2013 to 2017.



In how many years were the imports more than 80% of the average exports (per year) of the country during the given 5 years?

- Ans
- ☒ 1. 4
 - ☒ 2. 2
 - ☒ 3. 1
 - ☒ 4. 3

Question ID : 558101456

Status : Answered

Chosen Option : 1

Q.76 Renu was sitting inside train A, which was travelling at 50 km/h. Another train, B, whose length was three times the length of A crossed her in the opposite direction in 15 seconds. If the speed of train B was 58 km/h, then the length of train A (in m) is:

- Ans
- ☒ 1. 210
 - ☒ 2. 180
 - ☒ 3. 160
 - ☒ 4. 150

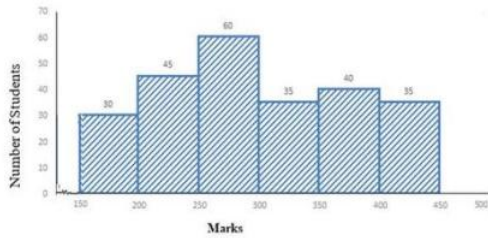
Question ID : 558101401

Status : Not Answered

Chosen Option : --

Q.77

The given graph shows the marks obtained by students in an examination.



The number of students who obtained less than 300 marks is what percent more than the number of students who obtained 350 or more marks?

- Ans ☒ 1. 80%
☒ 2. 28%
☒ 3. 44.4%
☒ 4. 22.7%

Question ID : 558101452
 Status : Answered
 Chosen Option : 1

Q.78 In $\triangle ABC$, $AB = AC$ and D is a point on BC . If $BD = 5$ cm, $AB = 12$ cm and $AD = 8$ cm, then the length of CD is:

- Ans ☒ 1. 14.8 cm
☒ 2. 16.2 cm
☒ 3. 16 cm
☒ 4. 14 cm

Question ID : 558101434
 Status : Not Answered
 Chosen Option : --

Q.79 The ratio of the incomes of A and B last year was 4 : 3, respectively. The ratios of their individual incomes of the last year and the present year are 3 : 4 and 5 : 6, respectively. If their total income for the present year is ₹8.04 lakh, then the income of B last year was:

- Ans ☒ 1. ₹2.7 lakh
☒ 2. ₹3.6 lakh
☒ 3. ₹2.4 lakh
☒ 4. ₹2.8 lakh

Question ID : 558101390
 Status : Answered
 Chosen Option : 1

Q.80 When a two-digit number is multiplied by the sum of its digits, the product is 424. When the number obtained by interchanging its digits is multiplied by the sum of the digits, the result is 280. The sum of the digits of the given number is:

- Ans ☒ 1. 6
☒ 2. 9
☒ 3. 8
☒ 4. 7

Question ID : 558101372
 Status : Answered

Q.81 To do a certain work, the ratio of the efficiencies of X and Y is 5 : 4. Working together, they can complete the same work in 10 days. Y alone starts the work and leaves after 5 days. The remaining work will be completed by X alone in:





- Ans  1. 14 days
 2. 12 days
 3. 15 days
 4. 10 days

Question ID : 558101407

Status : Answered

Chosen Option : 1

Q.82 The bisector of $\angle B$ in $\triangle ABC$ meets AC at D. If AB = 10 cm, BC = 11 cm and AC = 14 cm, then the length of AD is:





- Ans  1. 6 cm
 2. $\frac{22}{3}$ cm
 3. 7 cm
 4. $\frac{20}{3}$ cm

Question ID : 558101430

Status : Answered

Chosen Option : 4

Q.83 The value of $0.5\overline{6} - 0.7\overline{23} + 0.3\overline{9} \times 0.\overline{7}$ is:

- Ans  1. $0.1\overline{54}$
 2. $0.1\overline{54}$
 3. $0.1\overline{58}$
 4. $0.1\overline{58}$

Question ID : 558101362

Status : Not Answered

Chosen Option : --

Q.84 A circle is inscribed in a quadrilateral ABCD touching AB, BC, CD and AD at the points P, Q, R and S, respectively, and $\angle B = 90^\circ$. If AD = 24 cm, AB = 27 cm and DR = 6 cm, then what is the circumference of the circle?

- Ans  1. 20π
 2. 18π
 3. 15π
 4. 12π

Question ID : 558101438

Status : Not Answered

Chosen Option : --

Q.85

Places A and B are 396 km apart. Train X leaves from A for B and train Y leaves from B for A at the same time on the same day on parallel tracks. Both trains meet after $5\frac{1}{2}$ hours. The speed of Y is 10 km/h more than that of X. What is the speed (in km/h) of Y?

- Ans  1. 41
 2. 54
 3. 31
 4. 56

Question ID : 558101403
Status : Answered
Chosen Option : 1

Q.86 If the curved surface area of a solid cylinder is one-third of its total surface area, then what is the ratio of its diameter to its height?

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

Question ID : 558101413
Status : Answered
Chosen Option : 4

Q.87 A sum amounts to ₹14,395.20 at 9.25 % p.a. simple interest in 5.4 years. What will be the simple interest on the same sum at 8.6 % p.a. in 4.5 years?

- Ans  1. ₹3,715.20
 2. ₹3,627
 3. ₹3,797.76
 4. ₹3,672

Question ID : 558101386
Status : Not Answered
Chosen Option : --

Q.88 When an article is sold at its marked price, it gives a profit of 25%. If a discount of 9.6% is allowed on the marked price, then the profit percent will be:

- Ans  1. 13
 2. 15.4
 3. 15
 4. 16.6

Question ID : 558101385
Status : Answered
Chosen Option : 1

Q.89 A man sells his goods at a certain price, 20% of which is his profit. If the price at which he buys the goods increases by 10% and he sells them at an 8% higher price, then what will be his profit percent (correct to one decimal place)?

- Ans  1. 21.8
 2. 23.4
 3. 21.4

✓ 4. 22.7

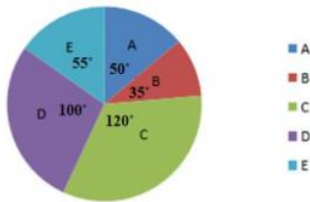
Question ID : 558101382

Status : Answered

Chosen Option : 4

Q.90 The given pie chart shows the quantity wise sales distribution of five products (A, B, C, D and E) of a company in 2016.

Quantity wise sales distribution of five products (A, B, C, D and E)



In 2016, if a total of 14616 units were sold, then the number of units of products D sold was:

- Ans
- ✗ 1. 4263
 - ✗ 2. 4872
 - ✓ 3. 4060
 - ✗ 4. 4096

Question ID : 558101455

Status : Answered

Chosen Option : 3

Q.91 The value of $9 \times 6 \div 24 + 8 \div 2$ of $5 - 30 \div 4$ of $4 + 27 \times 5 \div 9$ is:

- Ans
- ✓ 1. $\frac{647}{40}$
 - ✗ 2. $\frac{243}{8}$
 - ✗ 3. $\frac{493}{8}$
 - ✗ 4. $\frac{259}{8}$

Question ID : 558101361

Status : Not Answered

Chosen Option : --

Q.92 A field roller, in the shape of a cylinder, has a diameter of 1 m and length of $1\frac{1}{4}$ m. If the speed at which the roller rolls is 14 revolutions per minute, then the maximum area (in m^2) that it can roll in 1 hour is:

(Take $\pi = \frac{22}{7}$)

- Ans
- ✗ 1. 3960
 - ✗ 2. 3600
 - ✓ 3. 3300
 - ✗ 4. 3560

Question ID : 558101411

Status : Marked For Review

Chosen Option : 3

Q.93 If the volume of a sphere is 4851 cm^3 , then its surface area (in cm^2) is:

(Take $\pi = \frac{22}{7}$)

- Ans ☒ 1. 1386
☒ 2. 2772
☒ 3. 1323
☒ 4. 1337

Question ID : 558101410
Status : Answered
Chosen Option : 1

Q.94 From a point exactly midway between the foot of two towers P and Q, the angles of elevation of their tops are 30° and 60° , respectively. The ratio of the height of P to that of Q is:

- Ans ☒ 1. 1 : 3
☒ 2. 1 : 2
☒ 3. $1 : 2\sqrt{3}$
☒ 4. $2 : 3\sqrt{3}$

Question ID : 558101451
Status : Answered
Chosen Option : 1

Q.95 The graphs of the equations $2x + 3y = 11$ and $x - 2y + 12 = 0$ intersect at $P(x_1, y_1)$ and the graph of the equation $x - 2y + 12 = 0$ intersects the x-axis at $Q(x_2, y_2)$. What is the value of $(x_1 - x_2 + y_1 + y_2)$?

- Ans ☒ 1. 13
☒ 2. -11
☒ 3. 15
☒ 4. -9

Question ID : 558101421
Status : Answered
Chosen Option : 3

Q.96 If $x = \frac{\sqrt{5}-\sqrt{3}}{\sqrt{5}+\sqrt{3}}$ and y is the reciprocal of x, then what is the value of $(x^3 + y^3)$?

- Ans ☒ 1. 488
☒ 2. 504
☒ 3. 472
☒ 4. 476

Question ID : 558101368
Status : Answered
Chosen Option : 1

Q.97 A man starts from his house and travelling at 30 km/h, he reaches his office late by 10 minutes, and travelling at 24 km/h, he reaches his office late by 18 minutes. The distance (in km) from his house to his office is:

- Ans ☒ 1. 18

✓ 2. 16

✗ 3. 12

✗ 4. 20

Question ID : 558101402

Status : **Marked For Review**

Chosen Option : 2

Q.98 The value of $(\tan 29^\circ \cot 61^\circ - \operatorname{cosec}^2 61^\circ) + \cot^2 54^\circ - \sec^2 36^\circ + (\sin^2 1^\circ + \sin^2 3^\circ + \sin^2 5^\circ + \dots + \sin^2 89^\circ)$ is:

Ans

✓ 1. $20\frac{1}{2}$

✗ 2. 21

✗ 3. $22\frac{1}{2}$

✗ 4. 22

Question ID : 558101450

Status : **Not Answered**

Chosen Option : --

Q.99 If $\sqrt{10 - 2\sqrt{21}} + \sqrt{8 + 2\sqrt{15}} = \sqrt{a} + \sqrt{b}$, where a and b are positive integers, then the value of \sqrt{ab} is closest to:

Ans

✗ 1. 4.6

✓ 2. 5.9

✗ 3. 6.8

✗ 4. 7.2

Question ID : 558101367

Status : **Answered**

Chosen Option : 2

Q.100 A can do 40% of a work in 12 days, whereas B can do 60% of the same work in 15 days. Both work together for 10 days. C completes the remaining work alone in 4 days. A, B and C together will complete 28% of the same work in:

Ans

✗ 1. $2\frac{1}{2}$ days

✗ 2. 3 days

✗ 3. $1\frac{1}{2}$ days

✓ 4. 2 days

Question ID : 558101406

Status : **Answered**

Chosen Option : 4

Combined Graduate Level Examination (Tier-II), 2018

| | |
|------------------|---|
| Roll No. | |
| Registration No. | |
| Name | |
| Test Venue | |
| 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^{61294} 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

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

- 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 $\operatorname{cosec}(67^\circ + \theta) - \sec(23^\circ - \theta) + \cos 15^\circ \cos 35^\circ \operatorname{cosec} 55^\circ \cos 60^\circ \operatorname{cosec} 75^\circ$ 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 $\angle CAE = 34^\circ$ and $\angle E = 30^\circ$, 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. $(b-a)(b-c)(c-a)$

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 $0^\circ < \theta < 90^\circ$, then what is the value of $\sin^2\theta + \cos^2\theta + \tan^2\theta + \operatorname{cosec}^2\theta$?

- 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 $(5x - 3)^2 + (2x + 5)^2 + 27(4 - 3x)^2 = 9(3 - 5x)(2x + 5)(3x - 4)$, 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 30cm^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 $\angle PSR = 125^\circ$, 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 $0.4\overline{7} + 0.5\overline{03} - 0.3\overline{9} \times 0.8\overline{}$ is:

- Ans
- ☐ 1. $0.6\overline{15}$
 - ☐ 2. $0.6\overline{15}$
 - ☐ 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 $DE \parallel AC$, 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

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

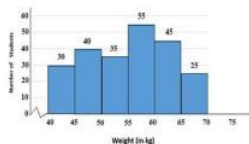
Question ID : 558101484
Status : **Not Answered**
Chosen Option : --

Q.29 The value of $\frac{\sec^2 \theta}{\csc^2 \theta} + \frac{\csc^2 \theta}{\sec^2 \theta} - (\sec^2 \theta + \csc^2 \theta)$ 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. B and C work together for 8 days. In how many days will A alone 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 : 558101476
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

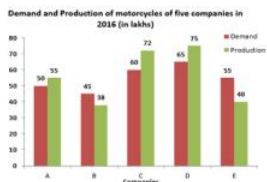
Question ID : 558101483
Status : Marked For Review
Chosen Option : 4

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 : 20
☒ 4. 3 : 2

Question ID : 558101557

Status : **Answered**
Chosen Option : 4

Q.41 A circle touches the side BC of $\triangle ABC$ 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 $\left(51\frac{3}{4}\right)^\circ$, 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

Q.46 In $\triangle ABC$, $BE \perp AC$, $CD \perp AB$ and BE and CD intersect each other at O . The bisectors of $\angle OBC$ and $\angle OCB$ meet at P . If $\angle BPC = 148^\circ$, 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 ΔPQR , $\angle Q > \angle R$, PS is the bisector of $\angle P$ and $PT \perp PQ$. If $\angle SPT = 28^\circ$ and $\angle R = 23^\circ$, 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 $\sin^2 64^\circ + \cos 64^\circ \sin 26^\circ + 2 \cos 43^\circ \operatorname{cosec} 47^\circ$ 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 $60\pi\text{ cm}^2$. 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. 35

☒ 4. 36

Question ID : 558101477
Status : Answered
Chosen Option : 2

Q.60 A student was asked to find the value of $9\frac{4}{9} \div 11\frac{1}{5}$ of $\frac{1}{6} + \left(1\frac{1}{5} \times 1\frac{4}{5} \div \frac{3}{5}\right) \times 2\frac{1}{6}$ 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 $\frac{\sin\theta + \cos\theta - 1}{\sin\theta - \cos\theta + 1} \times \frac{\tan^2\theta(\operatorname{cosec}^2\theta - 1)}{\sec\theta - \tan\theta}$ 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, $\angle C = 72^\circ$ and $\angle D = 28^\circ$. 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

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 $\frac{25}{12}$. 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

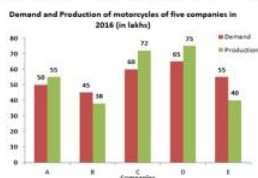
- ☒ 1. 33
☒ 2. 31
☒ 3. 35
☒ 4. 32

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 motorcycles 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 : 558101496
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 $x = \sqrt[3]{27} - \sqrt{6\frac{3}{4}}$ 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, $\frac{3}{8}$ 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 $\frac{2}{5}$ 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 $\triangle ABC$, D and E are the points on AB and AC respectively such that $AD \times AC = AB \times AE$. If $\angle ADE = \angle ACB + 30^\circ$ and $\angle ABC = 78^\circ$, 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 $\triangle PQR$, $\angle P = 120^\circ$, $PS \perp QR$ at S and $PQ + QS = SR$, then the measure of $\angle Q$ is:

Ans

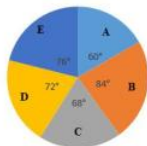
- ✗ 1. 20°
 ✗ 2. 50°

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

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

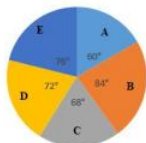
Question ID : 558101548
 Status : Answered
 Chosen Option : 1

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

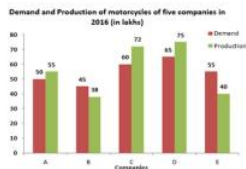
☒ 4. 1 : 2

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 : 558101566

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 $\triangle ABC$ 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

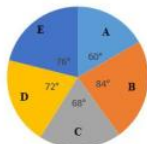
Question ID : 558101489
Status : Answered
Chosen Option : 4

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 $\triangle ABD$, 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