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Quantitative Aptitude Paper (2019)

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Combined Graduate Level Examination 2019 Tier II

Roll Number	
Venue Name	iON Digital Zone iDZ Jaulan Kalan
Exam Date	16/11/2020
Exam Time	10:00 AM - 12:00 PM
Subject	CGLE Tier II Paper I Quantitative abilities

Section : **Quantitative abilities**

Q.1 If $(x+y)^3+8(x-y)^3 = (3x+Ay)(3x^2+Bxy+Cy^2)$, then the value of A+B+C is:

Ans
✔ 1. 0
✘ 2. 4
✘ 3. 2
✘ 4. 3

Question ID : **6549781776**
Status : **Answered**
Chosen Option : **1**

Q.2 If $\cos(2\theta+54°) = \sin\theta$, $0°<(2\theta+54°)<90°$, then what is the value of $\frac{1}{\tan 5\theta+\operatorname{cosec}\frac{5\theta}{2}}$?

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

Question ID : **6549781817**
Status : **Answered**
Chosen Option : **2**

Q.3 The circumference of the base of a right circular cone is 44 cm and its height is 24 cm. The curved surface area (in cm^2) of the cone is:
(Take $\pi = \frac{22}{7}$)

Ans
✘ 1. 528
✘ 2. 572
✔ 3. 550
✘ 4. 440

Question ID : **6549781799**
Status : **Answered**
Chosen Option : **3**

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Q.4 The value of $(tan^2A + cot^2A - 2) - sec^2A\, cosec^2A$ is:

Ans

✔ 1. -4

✘ 2. -1

✘ 3. 1

✘ 4. 4

Question ID : **6549781810**
Status : **Answered**
Chosen Option : **1**

Q.5 The average of twenty-five numbers is 54. The average of the first 13 numbers and that of the last 13 numbers is 52.8 and 62.2, respectively. If the 13^{th} number is excluded, then what is the average of the remaining numbers (correct to one decimal place)?

Ans

✘ 1. 50.6

✘ 2. 49.8

✘ 3. 51.2

✔ 4. 50.2

Question ID : **6549781774**
Status : **Answered**
Chosen Option : **4**

Q.6 $\frac{sin^2\theta}{cos\theta(1+cos\theta)} + \frac{1+cos\theta}{cos\theta} = ?$

Ans

✘ 1. $cosec\theta$

✘ 2. $sec\theta$

✘ 3. $2cos\theta$

✔ 4. $2sec\theta$

Question ID : **6549781812**
Status : **Answered**
Chosen Option : **3**

Q.7 In ΔABC, D is a point on side BC such that $\angle ADC = 2\angle BAD$. If $\angle A = 80°$ and $\angle C = 38°$, then what is the measure of $\angle ADB$?

Ans

✘ 1. $58°$

✘ 2. $62°$

✘ 3. $52°$

✔ 4. $56°$

Question ID : **6549781788**
Status : **Answered**
Chosen Option : **4**

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Q.8 To do a certain work, the ratio of the efficiencies of A and B is 7 : 5. Working together, they can complete the same work in $17\frac{1}{2}$ days. A alone will complete 60% of the same work in:

Ans

✔ 1. 18 days

✘ 2. 15 days

✘ 3. 16 days

✘ 4. 21 days

Question ID : **6549781773**
Status : **Answered**
Chosen Option : **1**

Q.9 In what ratio should sugar costing ₹40 per kg be mixed with sugar costing ₹48 per kg, so as to earn a profit of 20% by selling the mixture at ₹54 per kg?

Ans

✔ 1. 3 : 5

✘ 2. 4 : 7

✘ 3. 5 : 8

✘ 4. 2 : 3

Question ID : **6549781764**
Status : **Answered**
Chosen Option : **1**

Q.10 From the top of a hill 240 m high, the angles of depression of the top and bottom of a pole are 30° and 60°, respectively. The difference (in m) between the height of the pole and its distance from the hill is:

Ans

✘ 1. $120(2-\sqrt{3})$

✘ 2. $120(\sqrt{3}-1)$

✘ 3. $80(\sqrt{3}-1)$

✔ 4. $80(2-\sqrt{3})$

Question ID : **6549781819**
Status : **Answered**
Chosen Option : **4**

Q.11 If $\sqrt{11-3\sqrt{8}} = a + b\sqrt{2}$, then what is the value of $(2a + 3b)$?

Ans

✘ 1. 7

✘ 2. 9

✔ 3. 3

✘ 4. 5

Question ID : **6549781740**
Status : **Answered**
Chosen Option : **3**

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Q.12 The number of students in section A and section B of a class are 40 and 52, respectively. The average score in mathematics of all the students is 75. If the average score of the students in A is 20% more than that of students in B, then what is the average score of students in B?

Ans

✗ 1. 71

✗ 2. 65

✓ 3. 69

✗ 4. 63

Question ID : **6549781775**
Status : **Answered**
Chosen Option : **3**

Q.13 A dealer marks his goods at 40% above the cost price. He sells 60% of the goods at the marked price giving 10% discount and the rest by giving 50% discount on the marked price. What is his overall profit/loss per cent?

Ans

✗ 1. Loss 2.8%

✗ 2. Profit 2.8%

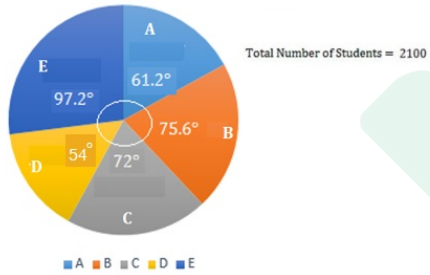
✓ 3. Profit 3.6%

✗ 4. Loss 3.6%

Question ID : **6549781759**
Status : **Answered**
Chosen Option : **3**

Q.14 Study the pie-chart and answer the options:-

Break up (degree wise) of students in terms of specialization in different areas (A,B,C,D & E) in an MBA program.



Total Number of Students = 2100

The total number of students specialising in A and B exceeds the total number of students specialising in C and D by x, which lies between:

Ans

✓ 1. 60 and 65

✗ 2. 55 and 60

✗ 3. 50 and 55

✗ 4. 65 and 70

Question ID : **6549781824**
Status : **Answered**
Chosen Option : **1**

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Q.15 The circumference of the base of a cylindrical vessel is 158.4 cm and its height is 1 m. How many litres of water can it hold (correct to one decimal place)?

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

Ans

1. 186.4
2. 200.8
3. 198.2
4. 199.6 ✓

Question ID : **6549781807**
Status : **Answered**
Chosen Option : **3**

Q.16 A hemispherical tank full of water is emptied by a pipe at the rate of 7.7 litres per second. How much time (in hours) will it take to empty $\frac{2}{3}$ part of the tank, if the internal radius of the tank is 10.5 m?

Ans

1. $\frac{185}{3}$
2. $\frac{185}{6}$
3. $\frac{175}{3}$ ✓
4. $\frac{175}{2}$

Question ID : **6549781803**
Status : **Answered**
Chosen Option : **3**

Q.17 A cylindrical roller made of iron is 1.2 m long. Its internal radius is 24 cm and thickness of the iron sheet used in making the roller is 15 cm. What is the mass (in kg) of the roller, if 1 cm^3 of iron has 8 g mass?

Ans

1. 846.72π
2. 845.75π
3. 892.8π
4. 907.2π ✓

Question ID : **6549781804**
Status : **Answered**
Chosen Option : **3**

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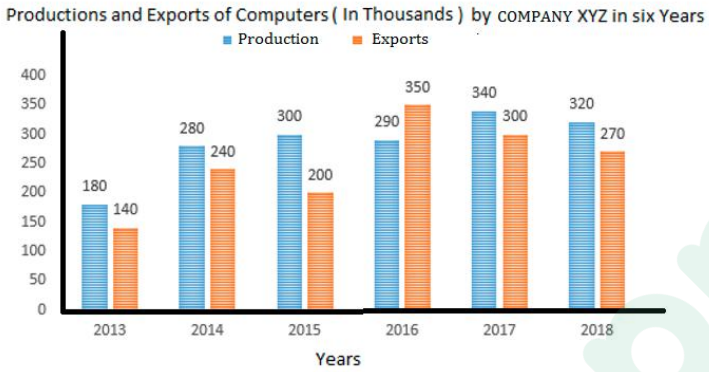
Q.18 The rate of interest for the first 2 years is 6% p.a., for the next 3 years is 10% p.a., and for the period beyond 5 years is 12% p.a. If a person gets ₹12,771 as simple interest after 7 years, then how much money did he invest?

Ans

1. ₹20,000
2. ₹19,350
3. ₹19,450
4. ₹19,300

Question ID : **6549781751**
Status : **Answered**
Chosen Option : **3**

Q.19 Study the given graph and answer the question that follows.



By what per cent were the total exports of computers, by the company, in 2013, 2014 and 2018 less than the total production of computers in 2015 to 2017 (correct to one decimal place)?

Ans

1. 28.8
2. 32.6
3. 43.1
4. 30.1

Question ID : **6549781823**
Status : **Answered**
Chosen Option : **4**

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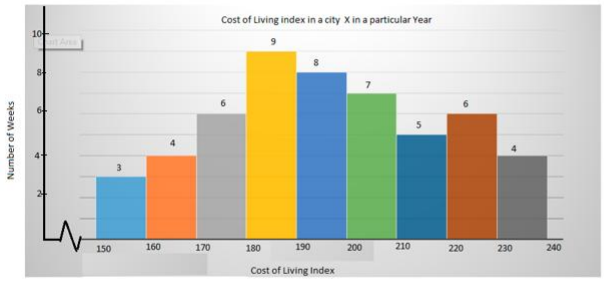
Q.20 Study the given graph and answer the question that follows.



The number of weeks, in which the cost of living index was 160 or more but less than 190, is approximately what per cent more than the number of weeks in which the cost of living index was 200 or more but less than 220 (correct to one decimal place)?

Ans

✔ 1. 58.3

✘ 2. 36.8

✘ 3. 60.6

✘ 4. 44.4

Question ID : **6549781820**
Status : **Answered**
Chosen Option : **1**

Q.21 The value of $\frac{7+3\sqrt{5}}{3+\sqrt{5}} - \frac{7-3\sqrt{5}}{3-\sqrt{5}}$ lies between:

Ans

✘ 1. 3 and 3.5

✔ 2. 2 and 2.5

✘ 3. 1.5 and 2

✘ 4. 2.5 and 3

Question ID : **6549781739**
Status : **Answered**
Chosen Option : **2**

Q.22 A and B enter into a partnership with capital in the ratio 5 : 6. After 4 months, A withdraws $\frac{1}{5}$ of his capital, while B increases his capital by $33\frac{1}{3}$%. What is the share (in ₹ lakhs) of B in the annual profit of ₹6.3 lakhs?

Ans

✘ 1. 2.34

✔ 2. 3.96

✘ 3. 2.61

✘ 4. 3.69

Question ID : **6549781763**
Status : **Answered**
Chosen Option : **2**

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Q.23 In ΔABC, right angled at B, if $\tan A = \frac{1}{2}$, then the value of $\frac{\sin A\,(\cos C + \cos A)}{\cos C(\sin C - \sin A)}$ is:

Ans

✗ 1. 2

✗ 2. 1

✓ 3. 3

✗ 4. $2\sqrt{5}$

Question ID : **6549781815**
Status : **Answered**
Chosen Option : **3**

Q.24 When positive numbers a, b and c are divided by 13, the remainders are 9, 7 and 10, respectively. What will be the remainder when $(a + 2b + 5c)$ is divided by 13?

Ans

✓ 1. 8

✗ 2. 9

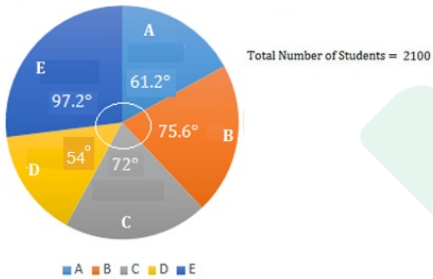
✗ 3. 5

✗ 4. 10

Question ID : **6549781727**
Status : **Answered**
Chosen Option : **1**

Q.25 Study the pie-chart and answer the options:-

Break up (degree wise) of students in terms of specialization in different areas (A,B,C,D & E) in an MBA program.



If the ratio of male and female students specialising in B is 4 : 3 and that of male and female students specialising in D is 8 : 7, then the number of female students in D is what per cent less than the number of male students in B (correct to one decimal place)?

Ans

✓ 1. 41.7

✗ 2. 40.2

✗ 3. 55.8

✗ 4. 71.4

Question ID : **6549781826**
Status : **Answered**
Chosen Option : **3**

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Q.26 A train travelling at 36 km/h crosses a pole in 25 seconds. How much time (in seconds) will it take to cross a bridge 350 m long?

Ans

1. 72 ✗
2. 48 ✗
3. 60 ✓
4. 56 ✗

Question ID : **6549781767**
Status : **Answered**
Chosen Option : **3**

Q.27 $\frac{25\% \text{ of } (50\% \text{ of } 30\% \text{ of } 150)}{40\% \text{ of } 2250}$ is equal to:

Ans

1. 0.625% ✓
2. 0.225% ✗
3. 0.825% ✗
4. 0.25% ✗

Question ID : **6549781743**
Status : **Answered**
Chosen Option : **1**

Q.28 What price should Neeraj mark on a shirt that costs ₹840, so as to earn a profit of 18% after allowing a discount of 16% on the marked price?

Ans

1. ₹1,200 ✗
2. ₹1,180 ✓
3. ₹1,240 ✗
4. ₹1,160 ✗

Question ID : **6549781761**
Status : **Answered**
Chosen Option : **2**

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Q.29 If $x-\frac{1}{x}=5, x \neq 0$, then what is the value of $\frac{x^6+3x^3-1}{x^6-8x^3-1}$?

Ans

1. $\frac{3}{8}$
2. $\frac{13}{12}$
3. $\frac{4}{9}$
4. $\frac{11}{13}$

Question ID : **6549781780**
Status : **Answered**
Chosen Option : **2**

Q.30 Alloy A contains metals x and y only in the ratio 5 : 2 and alloy B contains these metals in the ratio 3 : 4. Alloy C is prepared by mixing A and B in the ratio 4 : 5. The percentage of x in alloy C is:

Ans

1. 45
2. $55\frac{5}{9}$
3. $44\frac{4}{9}$
4. 56

Question ID : **6549781765**
Status : **Answered**
Chosen Option : **2**

Q.31 The value of $\frac{5cos^2 60°+4\ sec^2 30°-tan^2 45°}{tan^2 60°-sin^2 30°-cos^2 45°}$ is:

Ans

1. $\frac{67}{27}$
2. $\frac{22}{9}$
3. $\frac{67}{24}$
4. $\frac{19}{9}$

Question ID : **6549781816**
Status : **Answered**
Chosen Option : **1**

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Q.32 If x = sec 57°, then

$cot^2 33° + sin^2 57° + sin^2 33° + cosec^2 57° \, cos^2 33° + sec^2 33° \, sin^2 57°$ is equal to:

Ans

✗ 1. $2x^2 + 1$

✗ 2. $\frac{1}{x^2 + 1}$

✗ 3. $x^2 + 1$

✓ 4. $x^2 + 2$

Question ID : **6549781818**
Status : **Answered**
Chosen Option : **4**

Q.33 Reshma buys two articles A and B for ₹1,734. She sells A at a loss of 16% and sells B at a gain of 20%. The selling price of both the articles is the same. If A is sold for ₹1,147.50, then the gain per cent on A is:

Ans

✓ 1. 12.5

✗ 2. 12

✗ 3. 10.5

✗ 4. 10

Question ID : **6549781758**
Status : **Answered**
Chosen Option : **1**

Q.34 In ΔPQR, PS is the internal bisector of ∠P meeting QR at S, PQ = 16 cm, PR = 22.4 cm and QR = 9.6 cm. The length of SR (in cm) is:

Ans

✗ 1. 4

✗ 2. 4.4

✗ 3. 6

✓ 4. 5.6

Question ID : **6549781787**
Status : **Answered**
Chosen Option : **4**

Q.35 A shopkeeper bought 20 kg of rice at ₹55 per kg, 25 kg of rice at ₹50 per kg, and 35 kg of rice at ₹60 per kg. He spent a sum of ₹150 on transportation. He mixed all the three types of rice and sold all the stock at ₹62.56 per kg. His profit per cent in the entire transaction is:

Ans

✓ 1. 8.8

✗ 2. 12.5

✗ 3. 10.5

✗ 4. 9.2

Question ID : **6549781757**
Status : **Answered**
Chosen Option : **2**

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Q.36 If $\text{cosec}\,\theta = b/a$, then $\frac{\sqrt{3}\cot\theta+1}{\tan\theta+\sqrt{3}}$ is equal to:

Ans

1. $\frac{\sqrt{b^2-a^2}}{b}$
2. $\frac{\sqrt{b^2-a^2}}{a}$
3. $\frac{\sqrt{a^2+b^2}}{a}$
4. $\frac{\sqrt{a^2+b^2}}{b}$

Question ID : **6549781814**
Status : **Answered**
Chosen Option : **2**

Q.37 When x is subtracted from each of 19, 28, 55 and 91, the numbers so obtained in this order, are in proportion. What is the mean proportional between $(x+9)$ and x^2?

Ans

1. 27
2. 32
3. 28
4. 24

Question ID : **6549781748**
Status : **Answered**
Chosen Option : **3**

Q.38 A solid metallic cuboid of dimensions 18 cm × 36 cm × 72 cm is melted and recast into 8 cubes of the same volume. What is the ratio of the total surface area of the cuboid to the sum of the lateral surface areas of all 8 cubes?

Ans

1. 4 : 7
2. 7 : 8
3. 7 : 12
4. 2 : 3

Question ID : **6549781808**
Status : **Answered**
Chosen Option : **2**

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Q.39 If the radius of a sphere is increased by 2.5 decimetre (dm), then its surface area increases by 110 dm^2. What is the volume (in dm^3) of the sphere?

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

Ans

✗ 1. $\frac{13}{21}$

✗ 2. $\frac{3}{7}$

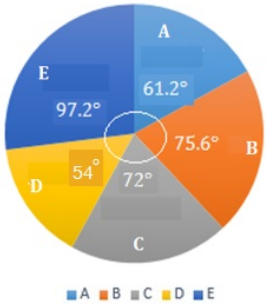
✗ 3. $\frac{4}{7}$

✓ 4. $\frac{11}{21}$

Question ID : **6549781801**
Status : **Answered**
Chosen Option : **4**

Q.40 Study the pie-chart and answer the options:-

Break up (degree wise) of students in terms of specialization in different areas (A,B,C,D & E) in an MBA program.



Total Number of Students = 2100

The number of students specialising in E is what per cent more than that of students specialising in C?

Ans

✗ 1. 25.9

✗ 2. 30.4

✗ 3. 32

✓ 4. 35

Question ID : **6549781825**
Status : **Answered**
Chosen Option : **4**

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Q.41 A sum of ₹10,500 amounts to ₹13,650 in 2 years at a certain rate per cent per annum simple interest. The same sum will amount to what in 1 year at the same rate, if the interest is compounded half yearly (nearest to ₹1)?

Ans

✗ 1. ₹12,124

✓ 2. ₹12,134

✗ 3. ₹12,143

✗ 4. ₹12,314

Question ID : **6549781752**
Status : **Answered**
Chosen Option : **2**

Q.42 A boat can go 5 km upstream and $7\frac{1}{2}$ km downstream in 45 minutes. It can also go 5 km downstream and 2.5 km upstream in 25 minutes. How much time (in minutes) will it take to go 6 km upstream?

Ans

✗ 1. 30

✓ 2. 36

✗ 3. 24

✗ 4. 32

Question ID : **6549781769**
Status : **Answered**
Chosen Option : **2**

Q.43 If the five-digit number $235xy$ is divisible by 3, 7 and 11, then what is the value of $(3x - 4y)$?

Ans

✓ 1. 10

✗ 2. 8

✗ 3. 9

✗ 4. 5

Question ID : **6549781729**
Status : **Answered**
Chosen Option : **3**

Q.44 Two men and 7 women can complete a work in 28 days, whereas 6 men and 16 women can do the same work in 11 days. In how many days will 5 men and 4 women, working together, complete the same work?

Ans

✗ 1. 20

✗ 2. 18

✗ 3. 14

✓ 4. 22

Question ID : **6549781772**
Status : **Answered**
Chosen Option : **4**

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Q.45 The denominator of a fraction is 4 more than twice the numerator. When the numerator is increased by 3 and the denominator is decreased by 3, the fraction becomes $\frac{2}{3}$. What is the difference between the denominator and numerator of the original fraction?

Ans

1. 13 ✗
2. 10 ✗
3. 12 ✗
4. 11 ✓

Question ID : **6549781737**
Status : **Answered**
Chosen Option : **4**

Q.46 The monthly salaries of A and B are the same. A, B and C donate 10%, 8% and 9% respectively, of their monthly salaries to a charitable trust. The difference between the donations of A and B is ₹400. The total donation by A and B is ₹900 more than that of C. What is the monthly salary of C?

Ans

1. ₹25,000 ✗
2. ₹30,000 ✓
3. ₹27,000 ✗
4. ₹36,000 ✗

Question ID : **6549781746**
Status : **Answered**
Chosen Option : **2**

Q.47 Let ab, $a \neq b$, is a 2-digit prime number such that ba is also a prime number. The sum of all such numbers is:

Ans

1. 407 ✗
2. 418 ✓
3. 396 ✗
4. 374 ✗

Question ID : **6549781730**
Status : **Answered**
Chosen Option : **1**

Q.48 An article is marked 25% above its cost price. If x % discount is allowed on the marked price and still there is a profit of 5.5%, then what is the value of x ?

Ans

1. 16.4 ✗
2. 15.4 ✗
3. 13.6 ✗
4. 15.6 ✓

Question ID : **6549781760**
Status : **Answered**
Chosen Option : **3**

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Q.49 The value of $\frac{27\times(0.25)^3+125(0.05)^3}{(0.75)^2-0.25\times0.5}$ is :

Ans
1. 1 ✔
2. 0.75 ✘
3. 0.25 ✘
4. 0.5 ✘

Question ID : **6549781733**
Status : **Answered**
Chosen Option : **1**

Q.50 The value of $\frac{\sin\theta+\cos\theta-1}{\sin\theta-\cos\theta+1}\times\sqrt{\frac{1+\sin\theta}{1-\sin\theta}}$ is:

Ans
1. -2 ✘
2. 2 ✘
3. -1 ✘
4. 1 ✔

Question ID : **6549781813**
Status : **Answered**
Chosen Option : **4**

Q.51 The base of a solid right prism of height 10 cm is a square and its volume is 160 cm^3. What is its total surface area of the prism (in cm^2)?

Ans
1. 200 ✘
2. 176 ✘
3. 192 ✔
4. 180 ✘

Question ID : **6549781797**
Status : **Answered**
Chosen Option : **3**

Q.52 A can do $\frac{1}{3}$ of a work in 30 days. B can do $\frac{2}{5}$ of the same work in 24 days. They worked together for 20 days. C completed the remaining work in 8 days. Working together A, B and C will complete the same work in:

Ans
1. 15 days ✘
2. 10 days ✘
3. 18 days ✘
4. 12 days ✔

Question ID : **6549781770**
Status : **Answered**
Chosen Option : **4**

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Q.53 The value of $4 \div 12\ of\ [3 \div 4\ of\ \{(4-2) \times 6 \div 2\}] - 2 \times 6 \div 8 + 3$ is:

Ans

✔ 1. $4\frac{1}{6}$

✘ 2. $3\frac{1}{3}$

✘ 3. $2\frac{1}{3}$

✘ 4. $7\frac{1}{6}$

Question ID : **6549781728**
Status : **Answered**
Chosen Option : **1**

Q.54 What is the area (in sq. units) of the triangle formed by the graphs of the equations $2x + 5y - 12 = 0$, $x + y = 3$ and $y = 0$?

Ans

✔ 1. 3

✘ 2. 2

✘ 3. 5

✘ 4. 6

Question ID : **6549781782**
Status : **Answered**
Chosen Option : **1**

Q.55 A metallic solid spherical ball of radius 3 cm is melted and recast into three spherical balls. The radii of two of these balls are 2 cm and 1.5 cm. What is the surface area (in cm^2) of the third ball?

Ans

✘ 1. $50\ \pi$

✘ 2. $\frac{25}{4}\pi$

✔ 3. $25\ \pi$

✘ 4. $\frac{25}{2}\pi$

Question ID : **6549781802**
Status : **Answered**
Chosen Option : **3**

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Q.56 In ΔABC, D and E are points on the sides AB and AC, respectively, such that DE $\parallel$ BC. If AD = 5 cm, DB = 9 cm, AE = 4 cm and BC = 15.4 cm, then the sum of the lengths of DE and EC (in cm) is:

Ans

✗ 1. 11.6

✗ 2. 10.8

✗ 3. 13.4

✓ 4. 12.7

Question ID : **6549781789**
Status : **Answered**
Chosen Option : **4**

Q.57 The base of a right pyramid is an equilateral triangle with side 8 cm, and its height is $30\sqrt{3}$ cm. The volume (in cm^3) of the pyramid is:

Ans

✗ 1. $240\sqrt{3}$

✗ 2. $360\sqrt{3}$

✓ 3. 480

✗ 4. 360

Question ID : **6549781798**
Status : **Answered**
Chosen Option : **3**

Q.58 If $a : b : c = \frac{1}{4} : \frac{1}{3} : \frac{1}{2}$, then $\frac{a}{b} : \frac{b}{c} : \frac{c}{a} = ?$

Ans

✗ 1. 12 : 9 : 8

✓ 2. 9 : 8 : 24

✗ 3. 8 : 9 : 24

✗ 4. 9 : 12 : 8

Question ID : **6549781747**
Status : **Answered**
Chosen Option : **2**

Q.59 A loan is to be returned in two equal yearly instalments. If the rate of interest is 10% p.a., compounded annually, and each instalment is ₹5,808, then the total interest charged in this scheme is:

Ans

✗ 1. ₹1,563

✓ 2. ₹1,536

✗ 3. ₹1,632

✗ 4. ₹1,602

Question ID : **6549781754**
Status : **Answered**
Chosen Option : **2**

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Q.60 The value of $3\frac{1}{5} \div 4\frac{1}{2}$ of $5\frac{1}{3} + \frac{1}{8} \div \frac{1}{2}$ of $\frac{1}{4} - \frac{1}{4}(\frac{1}{2} \div \frac{1}{8} \times \frac{1}{4})$ is:

Ans

✗ 1. $\frac{13}{15}$

✗ 2. $\frac{7}{8}$

✗ 3. $\frac{3}{4}$

✓ 4. $\frac{53}{60}$

Question ID : **6549781734**
Status : **Answered**
Chosen Option : **2**

Q.61 A sold an item to B at 20% gain, B sold it to C at 8% gain. C sold it to D at 25% loss. If the difference between the profits of A and B is ₹260, then D bought it for:

Ans

✗ 1. ₹2,268

✓ 2. ₹2,430

✗ 3. ₹2,200

✗ 4. ₹2,480

Question ID : **6549781756**
Status : **Answered**
Chosen Option : **4**

Q.62 Renu saves 20% of her income. If her expenditure increases by 20% and income increases by 29%, then her savings increase by:

Ans

✗ 1. 55%

✓ 2. 65%

✗ 3. 54%

✗ 4. 60%

Question ID : **6549781745**
Status : **Answered**
Chosen Option : **2**

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Q.63 The compound interest on a sum of ₹20,000 at 15% p.a. for $2\frac{2}{3}$ years, interest compounded yearly, is:

Ans

✗ 1. ₹9,098

✗ 2. ₹8,896

✗ 3. ₹9,000

✓ 4. ₹9,095

Question ID : **6549781753**
Status : **Answered**
Chosen Option : **2**

Q.64 From a solid cylindrical wooden block of height 18 cm and radius 7.5 cm, a conical cavity of the same height and same radius is taken out. What is total surface area (in cm^2) of the remaining solid?

Ans

✗ 1. $270\ \pi$

✗ 2. $416.25\ \pi$

✗ 3. $326.25\ \pi$

✓ 4. $472.5\ \pi$

Question ID : **6549781805**
Status : **Answered**
Chosen Option : **4**

Q.65 The ratio of the radii of two cones is 5 : 6 and their volumes are in the ratio 8 : 9. The ratio of their heights is:

Ans

✓ 1. 32 : 25

✗ 2. 25 : 32

✗ 3. 27 : 20

✗ 4. 20 : 27

Question ID : **6549781800**
Status : **Answered**
Chosen Option : **1**

Q.66 Let x be the least number which when subtracted from 10424 gives a perfect square number. What is the least number by which x should be multiplied to get a perfect square?

Ans

✗ 1. 3

✗ 2. 2

✗ 3. 6

✓ 4. 5

Question ID : **6549781738**
Status : **Answered**
Chosen Option : **4**

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Q.67 A certain sum is divided between A, B, C and D such that the ratio of the shares of A and B is 1 : 3, that of B and C is 2 : 5, and that of C and D is 2 : 3. If the difference between the shares of A and C is ₹3,510, then the share of D is:

Ans

✗ 1. ₹4,320

✗ 2. ₹3,240

✓ 3. ₹6,075

✗ 4. ₹4,050

Question ID : **6549781749**
Status : **Answered**
Chosen Option : **3**

Q.68 If $\frac{1}{x+\frac{1}{y+\frac{2}{z+\frac{1}{4}}}} = \frac{29}{79}$, where x, y and z are natural numbers, then the value of $(2x + 3y - z)$ is:

Ans

✗ 1. 0

✗ 2. 4

✗ 3. 1

✓ 4. 2

Question ID : **6549781736**
Status : **Answered**
Chosen Option : **2**

Q.69 In a circle, O is the centre of the circle. Chords AB and CD intersect at P. If $\angle AOD = 32°$ and $\angle COB = 26°$, then the measure of $\angle APD$ lies between:

Ans

✗ 1. 18° and 22°

✓ 2. 26° and 30°

✗ 3. 30° and 34°

✗ 4. 22° and 26°

Question ID : **6549781794**
Status : **Answered**
Chosen Option : **2**

Q.70 If a regular polygon has 16 sides, then what is the measure (in degrees) of its each interior angle?

Ans

✗ 1. 154

✓ 2. $157\frac{1}{2}$

✗ 3. 155

✗ 4. $159\frac{1}{2}$

Question ID : **6549781796**
Status : **Answered**
Chosen Option : **2**

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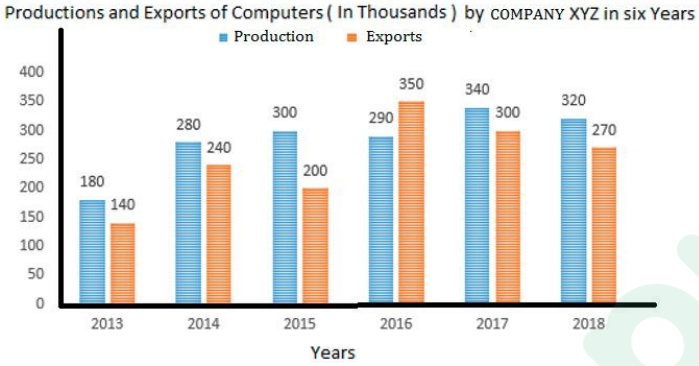
Q.71 $\frac{sec\,A\,(sec\,A + tan\,A)(1 - sin\,A)}{(cosec^2\,A - 1)sin^2 A}$ is equal to:

Ans
1. $cotA$
2. $cosA$
3. $sec^2 A$
4. $cos^2 A$

Question ID : **6549781809**
Status : **Answered**
Chosen Option : **3**

Q.72 Study the given graph and answer the question that follows.



The total production of computers in 2013, 2015 and 2018 is x% of the total exports of computers by the company during the six years. The value of x is:

Ans
1. $46\frac{1}{3}$
2. $52\frac{1}{3}$
3. $53\frac{1}{3}$
4. $49\frac{2}{3}$

Question ID : **6549781822**
Status : **Answered**
Chosen Option : **3**

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Q.73 Let D and E be two points on the side BC of ΔABC such that AD = AE and $\angle BAD = \angle EAC$. If AB = $(3x + 1)$ cm, BD = 9 cm, AC = 34 cm and EC = $(y + 1)$ cm, then the value of $(x + y)$ is:

Ans

✔ 1. 19

✘ 2. 16

✘ 3. 17

✘ 4. 20

Question ID : **6549781791**
Status : **Answered**
Chosen Option : **3**

Q.74 The value of $0.\overline{57} - 0.4\overline{32} + 0.3\overline{5}$ is:

Ans

✔ 1. $0.4\overline{98}$

✘ 2. $0.4\overline{94}$

✘ 3. $0.\overline{498}$

✘ 4. $0.\overline{494}$

Question ID : **6549781732**
Status : **Answered**
Chosen Option : **1**

Q.75 In $\Delta PQR, \angle P = 90°$. S and T are the mid points of sides PR and PQ, respectively. What is the value of $RQ^2/(QS^2 + RT^2)$?

Ans

✘ 1. $\frac{3}{4}$

✔ 2. $\frac{4}{5}$

✘ 3. $\frac{1}{2}$

✘ 4. $\frac{2}{3}$

Question ID : **6549781783**
Status : **Answered**
Chosen Option : **2**

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Q.76 In a circle with centre O, AB is the diameter. P and Q are two points on the circle on the same side of the diameter AB. AQ and BP intersect at C. If $\angle POQ = 54°$, then the measure of $\angle PCA$ is:

Ans

✔ 1. $63°$

✘ 2. $56°$

✘ 3. $54°$

✘ 4. $72°$

Question ID : **6549781793**
Status : **Answered**
Chosen Option : **1**

Q.77 A, B and C invested capital in the ratio 5 : 7 : 4, the timing of their investments being in the ratio $x : y : z$. If their profits are distributed in the ratio 45 : 42 : 28, then $x : y : z$ = ?

Ans

✔ 1. $9 : 6 : 7$

✘ 2. $7 : 9 : 4$

✘ 3. $9 : 4 : 7$

✘ 4. $6 : 7 : 9$

Question ID : **6549781762**
Status : **Answered**
Chosen Option : **1**

Q.78 In ΔABC, D and E are points on the sides AB and AC, respectively, such that $DE \parallel BC$ and DE : BC = 6 : 7. (Area of Δ ADE) : (Area of trapezium BCED) = ?

Ans

✘ 1. $49 : 13$

✘ 2. $13 : 36$

✘ 3. $13 : 49$

✔ 4. $36 : 13$

Question ID : **6549781790**
Status : **Answered**
Chosen Option : **4**

Q.79 The ratio of the monthly incomes of X and Y is 5 : 4 and that of their monthly expenditures is 9 : 7. If the income of Y is equal to the expenditure of X, then what is the ratio of the savings of X and Y?

Ans

✔ 1. $9 : 8$

✘ 2. $6 : 7$

✘ 3. $8 : 9$

✘ 4. $7 : 6$

Question ID : **6549781750**
Status : **Answered**
Chosen Option : **1**

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Q.80 Let x be the greatest number which when divides 955, 1027, 1075, the remainder in each case is the same. Which of the following is NOT a factor of x ?

Ans

1. 4 ✗
2. 16 ✓
3. 8 ✗
4. 6 ✗

Question ID : **6549781731**
Status : **Answered**
Chosen Option : **3**

Q.81 If $2x^2 - 7x + 5 = 0$, then what is the value of $x^2 + \frac{25}{4x^2}$?

Ans

1. $5\frac{1}{2}$ ✗
2. $7\frac{1}{4}$ ✓
3. $9\frac{1}{2}$ ✗
4. $9\frac{3}{4}$ ✗

Question ID : **6549781778**
Status : **Answered**
Chosen Option : **2**

Q.82 Raju ate $\frac{3}{8}$ part of a pizza and Adam ate $\frac{3}{10}$ part of the remaining pizza. Then Renu ate $\frac{4}{7}$ part of the pizza that was left. What fraction of the pizza is still left?

Ans

1. $\frac{5}{12}$ ✗
2. $\frac{1}{4}$ ✗
3. $\frac{1}{8}$ ✗
4. $\frac{3}{16}$ ✓

Question ID : **6549781735**
Status : **Answered**
Chosen Option : **4**

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Q.83 A secant PAB is drawn from an external point P to the circle with centre O, intersecting it at A and B. If OP = 17 cm, PA = 12 cm and PB = 22.5 cm, then the radius of the circle is:

Ans

✗ 1. $2\sqrt{3}$ cm

✓ 2. $\sqrt{19}$ cm

✗ 3. $\sqrt{17}$ cm

✗ 4. $3\sqrt{2}$ cm

Question ID : **6549781792**
Status : **Answered**
Chosen Option : **2**

Q.84 Pipes A and B can fill a tank in 12 minutes and 15 minutes, respectively. The tank when full can be emptied by pipe C in x minutes. When all the three pipes are opened simultaneously, the tank is full in 10 minutes. The value of x is:

Ans

✗ 1. 18

✗ 2. 15

✓ 3. 20

✗ 4. 24

Question ID : **6549781771**
Status : **Answered**
Chosen Option : **3**

Q.85 In a quadrilateral ABCD, E is a point in the interior of the quadrilateral such that DE and CE are the bisectors of $\angle D$ and $\angle C$, respectively. If $\angle B = 82°$ and $\angle DEC = 80°$, then $\angle A = ?$

Ans

✗ 1. $75°$

✗ 2. $81°$

✗ 3. $84°$

✓ 4. $78°$

Question ID : **6549781795**
Status : **Answered**
Chosen Option : **4**

Q.86 A drink of chocolate and milk contains 8% pure chocolate by volume. If 10 litres of pure milk are added to 50 litres of this drink, the percentage of chocolate in the new drink is:

Ans

✓ 1. $6\frac{2}{3}$

✗ 2. $5\frac{2}{3}$

✗ 3. $5\frac{1}{3}$

✗ 4. $6\frac{1}{3}$

Question ID : **6549781744**
Status : **Answered**
Chosen Option : **1**

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Q.87 In ΔABC, M and N are the points on side BC such that $AM \perp BC$, AN is the bisector of $\angle A$, and M lies between B and N. If $\angle B = 68°$, and $\angle C = 26°$, then the measure of $\angle MAN$ is:

Ans

✔ 1. $21°$

✘ 2. $28°$

✘ 3. $24°$

✘ 4. $22°$

Question ID : **6549781785**
Status : **Answered**
Chosen Option : **1**

Q.88 A and B start moving from places X and Y and Y to X, respectively, at the same time on the same day. After crossing each other, A and B take $5\frac{4}{9}$ hours and 9 hours, respectively, to reach their respective destinations. If the speed of A is 33 km/h, then the speed (in km/h) of B is:

Ans

✘ 1. 22

✘ 2. 2

✔ 3. $25\frac{2}{3}$

✘ 4. $24\frac{1}{3}$

Question ID : **6549781768**
Status : **Answered**
Chosen Option : **3**

Q.89 In ΔABC, D and E are the midpoints of sides BC and AC, respectively. AD and BE intersect at G at right angle. If AD = 18 cm and BE = 12 cm, then the length of DC (in cm) is:

Ans

✔ 1. 10

✘ 2. 6

✘ 3. 9

✘ 4. 8

Question ID : **6549781786**
Status : **Answered**
Chosen Option : **3**

Q.90 If A is 40% less than B and C is 40% of the sum of A and B, then by what percentage is B greater than C?

Ans

✘ 1. 60

✔ 2. $56\frac{1}{4}$

✘ 3. $40\frac{1}{8}$

✘ 4. 36

Question ID : **6549781742**
Status : **Answered**
Chosen Option : **4**

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Q.91 When 5 children from class A join class B, the number of children in both classes is the same. If 25 children from B, join A, then the number of children in A becomes double the number of children in B. The ratio of the number of children in A to those in B is:

Ans

✗ 1. 19 : 18

✗ 2. 9 : 8

✗ 3. 18 : 17

✓ 4. 19 : 17

Question ID : **6549781741**
Status : **Answered**
Chosen Option : **4**

Q.92 A T.V. is sold at 8% gain. Had it been sold for ₹714 more, the gain would have been 15%. To gain 18%, the selling price of the T.V. should be:

Ans

✓ 1. ₹12,036

✗ 2. ₹12,138

✗ 3. ₹11,934

✗ 4. ₹12,240

Question ID : **6549781755**
Status : **Answered**
Chosen Option : **1**

Q.93 If $a + b + c = 7$ and $a^3 + b^3 + c^3 - 3abc = 175$, then what is the value of $(ab + bc + ca)$?

Ans

✓ 1. 8

✗ 2. 9

✗ 3. 7

✗ 4. 6

Question ID : **6549781779**
Status : **Answered**
Chosen Option : **1**

Q.94 If $x^2 + 4y^2 = 17$ and $xy = 2$, where $x > 0$, $y > 0$, then what is the value of $x^3 + 8y^3$?

Ans

✗ 1. 95

✗ 2. 85

✓ 3. 65

✗ 4. 76

Question ID : **6549781777**
Status : **Answered**
Chosen Option : **3**

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Q.95 Amita travels from her house at $3\frac{1}{2}$ km/h and reaches her school 6 minutes late. The next day she travels at $4\frac{1}{2}$ km/h and reaches her school 10 minutes early. What is the distance between her house and the school?

Ans

✗ 1. 5.6 km

✗ 2. 4.8 km

✗ 3. 5.4 km

✓ 4. 4.2 km

Question ID : **6549781766**
Status : **Answered**
Chosen Option : **4**

Q.96 In ΔABC, O is the incentre and $\angle BOC = 135°$. The measure of $\angle BAC$ is:

Ans

✓ 1. $90°$

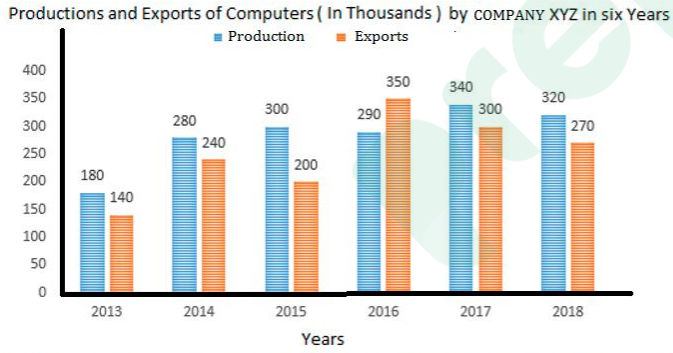
✗ 2. $55°$

✗ 3. $80°$

✗ 4. $45°$

Question ID : **6549781784**
Status : **Answered**
Chosen Option : **1**

Q.97 Study the given graph and answer the question that follows.



In which year was the production of computers by the company 16% more than the average exports of computers in the six years (2013 to 2018)?

Ans

✗ 1. 2015

✗ 2. 2018

✗ 3. 2014

✓ 4. 2016

Question ID : **6549781821**
Status : **Answered**
Chosen Option : **4**

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Q.98 The graphs of the linear equations $3x - 2y = 8$ and $4x + 3y = 5$ intersect at the point $P(\propto, \beta)$.

What is the value of $(2 \propto -\beta)$?

Ans

✗ 1. 3

✗ 2. 4

✗ 3. 6

✓ 4. 5

Question ID : **6549781781**
Status : **Answered**
Chosen Option : **4**

Q.99 $\frac{(1+\tan\theta+\sec\theta)(1+\cot\theta-\operatorname{cosec}\theta)}{(\sec\theta+\tan\theta)(1-\sin\theta)}$ is equal to:

Ans

✓ 1. $2\sec\theta$

✗ 2. $2\operatorname{cosec}\theta$

✗ 3. $\operatorname{cosec}\theta$

✗ 4. $\sec\theta$

Question ID : **6549781811**
Status : **Answered**
Chosen Option : **3**

Q.100 The volume of a solid right circular cylinder of height 8 cm is $392\ \pi\ cm^3$. Its curved surface area (in cm^2) is:

Ans

✗ 1. $161\ \pi$

✗ 2. $96\ \pi$

✗ 3. $210\ \pi$

✓ 4. $112\ \pi$

Question ID : **6549781806**
Status : **Answered**
Chosen Option : **4**

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