

**SSC CGL 2017 EXAM PAPER : Held on 12-AUG-2017 Shift-1**  
**(Mathematics)**

**QID : 51** - If  $56M4$  is completely divisible by 11, then what is the value of  $M$ ?

**Options:**

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

**Correct Answer:**5

**QID : 52** - A and B can together do a piece of work in 10 days. If A works with twice of his efficiency and B works with an efficiency  $\frac{1}{3}$ rd less than his efficiency, then the work gets completed in 6 days. In how many days can A and B do the work alone respectively?

**Options:**

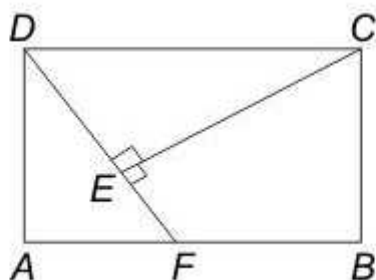
- 1)  $\frac{40}{3}$ , 40
- 2)  $\frac{20}{3}$ , 20
- 3) 30,  $\frac{20}{3}$
- 4)  $\frac{50}{3}$ , 25

**Correct Answer:**  $\frac{40}{3}$ , 40

**QID : 53** -

In the given figure,  $ABCD$  is a rectangle.  $F$  is a point on  $AB$  and  $CE$  is drawn perpendicular to  $DF$ . If  $CE = 60$  cm and  $DF = 40$  cm, then what is the area (in  $\text{cm}^2$ ) of the rectangle  $ABCD$ ?

दी गई आकृति में,  $ABCD$  एक आयत है।  $F$ ,  $AB$  पर एक बिन्दु है तथा  $CE$ ,  $DF$  पर लम्ब है। यदि  $CE = 60$  से.मी. तथा  $DF = 40$  से.मी. है, तो आयत  $ABCD$  का क्षेत्रफल (से.मी.<sup>2</sup> में) क्या है?



**Options:**

- 1) 1200
- 2) 1800
- 3) 2400
- 4) 2800

**Correct Answer:** 2400

**QID : 54** - What will be the net discount (in %) of two successive discounts of 15% and 35%?

**Options:**

- 1) 44.75
- 2) 51.25
- 3) 55.25
- 4) 56.25

**Correct Answer:** 44.75

**QID : 55** - A company, at the time of inflation reduced the staff in the ratio 5 : 3 and average salary per employee is increased in the ratio 7 : 8. By doing so, the company saved Rs 55000. What was the initial expenditure (in Rs) of company?

**Options:**

- 1) 155000
- 2) 160000

3) 175000

4) 215000

**Correct Answer:** 175000

**QID : 56** - a, b and c are 3 values, such that  $a + b = 5$ ,  $b + c = 7.5$  and  $c + a = 8.5$ . What will be the average of these values?

**Options:**

1) 1.5

2) 3

3) 3.5

4) 4.5

**Correct Answer:** 3.5

**QID : 57** - Due to increase of 33.33% in the price of apples, a customer can purchase 4 apples less for Rs 16. What is the original price (in paise) of an apple?

**Options:**

1) 100

2) 125

3) 150

4)  $400/3$

**Correct Answer:** 100

**QID : 58** - Due to increase of  $k\%$  in the side, the area of a square increases by 69%. What is the value of  $k$ ?

**Options:**

1) 30

2) 33

3) 34.5

4) 35

**Correct Answer:** 30

**QID : 59** - A starts from a point at a speed of 30 metre/second. After 3 seconds, B starts chasing A from the same point with a speed of 50 metre/second. What will be the total distance (in metres) travelled by A and B before A is caught by B?

**Options:**

1) 360

2) 450

3) 600

4) 720

**Correct Answer:** 450

**QID : 60** - The difference between compound interest and simple interest on a sum for 2 year at 20% per annum is Rs 200. If the interest is compounded half yearly, then what is the difference (in Rs) between compound and simple interest for 1st year?

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**Options:**

- 1) 50
- 2) 75
- 3) 100
- 4) 150

**Correct Answer:** 50

**QID : 61** - If  $x(2x + 3) = 90$  and  $7y^{-1/2} + 2y^{-1/2} = y^{1/2}$  ( $x$  and  $y$  are positive numbers), then what is the value of  $x^2 + y^2$ ?

**Options:**

- 1) 45
- 2) 109
- 3) 117
- 4) 126

**Correct Answer:** 117

**QID : 62** - If  $x/y = 4/9$ , then what is the value of  $(7x^2 - 19xy + 11y^2)/y^2$  ?

**Options:**

- 1) 59/81
- 2) 100/27
- 3) 319/81
- 4) 913/81

**Correct Answer:** 319/81

**QID : 63** - If  $x - 3 + [1/(x - 3)] = 4$ , what is the value of  $(x - 3)^3 + [1/(x - 3)]^3$ ?

**Options:**

- 1) 14
- 2) 18
- 3) 52
- 4) 76

**Correct Answer:** 52

**QID : 64** - If  $x^2 + y^2 + z^2 = xy + yz + zx$ , then what is the value of  $(7x + 3y - 5z)/5x$ ?

**Options:**

- 1) 0
- 2) 1
- 3) 5
- 4) 33/5

**Correct Answer:** 1

**QID : 65** - The length of diagonal BD of a parallelogram ABCD is 36 cm. P and Q are the centroids of triangle ABC and triangle ADC respectively. What is the length (in cm) of PQ?

**Options:**

- 1) 6
- 2) 9

3) 12

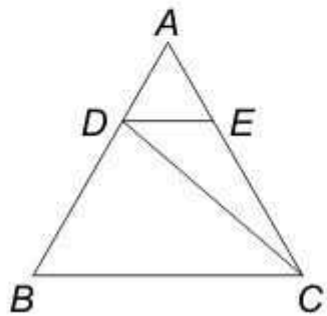
4) 18

**Correct Answer:** 12

**QID : 66 -**

In the given figure,  $DE \parallel BC$  and  $DE = \frac{1}{3} BC$ . If area of triangle  $ADE = 20 \text{ cm}^2$ , then what is the area (in  $\text{cm}^2$ ) of triangle  $DEC$ ?

दी गई आकृति में,  $DE \parallel BC$  तथा  $DE = \frac{1}{3} BC$  है। यदि त्रिभुज  $ADE$  का क्षेत्रफल 20 से.मी.<sup>2</sup> हो, तो त्रिभुज  $DEC$  का क्षेत्रफल (से.मी.<sup>2</sup> में) क्या है?



**Options:**

1) 40

2) 60

3) 80

4) 120

**Correct Answer:** 40

**QID : 67 -** If an equilateral triangle has side 12 cm, then what is the difference (in cm) between the circumradius and inradius?

**Options:**

1) 2 2

2) 3 2

3) 2 3

4)  $3\sqrt{3}$

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

**QID : 68** - If sum of the areas of the circumcircle and the incircle of an equilateral triangle is  $770\text{ cm}^2$ , then what is the area (in  $\text{cm}^2$ ) of the triangle?

**Options:**

1)  $125\sqrt{3}$

2)  $147\sqrt{3}$

3)  $156\sqrt{3}$

4)  $169\sqrt{3}$

**Correct Answer:**  $147\sqrt{3}$

**QID : 69** - What is the value of  $\sin(-\pi/3) + \cos(-\pi/6)$ ?

**Options:**

1) 0

2) 1

3) 2

4) 3

**Correct Answer:** 0

**QID : 70** - If  $\theta$  is acute angle and  $\tan \theta - \cot \theta = 0$ , then what is the value of  $\tan^{26} \theta + \cot^{100} \theta$  ?

**Options:**

1) -2

2) 0

3) 1

4) 2

**Correct Answer:** 2

**QID : 71** - If  $\sin 3\theta \sec 2\theta = 1$ , then what is the value of  $[3 \tan^2(5\pi/2) - 1]$ ?

**Options:**

1) 0

2) 1

3) 2

4) 3

**Correct Answer:** 2

**QID : 72** -

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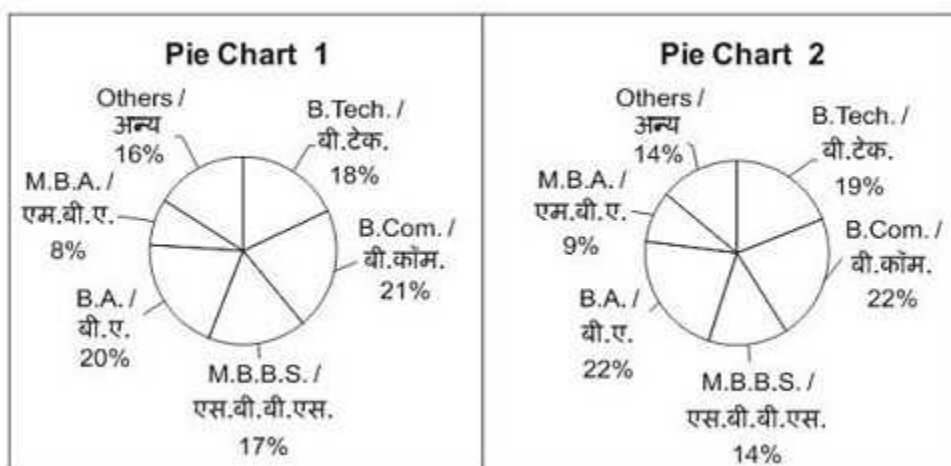
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The Pie chart 1 given below shows the segregation of 40000000 candidates who have filled the form of an examination. Pie chart 2 shows the segregation 35000000 candidates who were present in the examination. The segregation in both pie charts has been done on the basis of their highest qualification.

नीचे दिए गए वृत्त चित्र 1 में 40000000 उम्मीदवारों के पृथक्करण को दर्शाया गया है, जिन्होंने एक परीक्षा का पर्चा भरा है। वृत्त चित्र 2 में 35000000 उम्मीदवारों के पृथक्करण को दर्शाया गया है, जो परीक्षा में उपस्थित हुए। दोनों वृत्त चित्रों में पृथक्करण उम्मीदवारों की उच्चतम शिक्षा के आधार पर किया गया है।



If 18% of M.B.B.S. who have filled the form are from XYZ University, then how many M.B.B.S. candidates from XYZ University have filled the form?

**Options:**

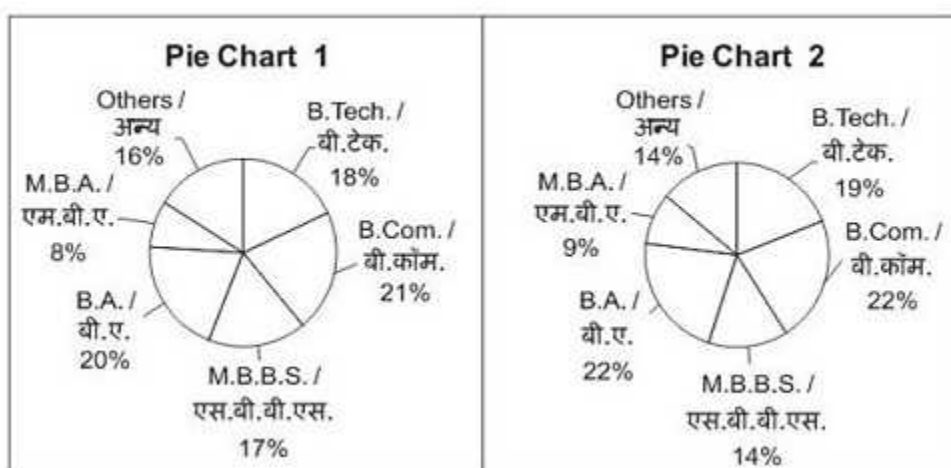
- 1) 1512000
- 2) 1224000
- 3) 1440000
- 4) None of these

**Correct Answer:** 1224000

**QID : 73 -**

The Pie chart 1 given below shows the segregation of 40000000 candidates who have filled the form of an examination. Pie chart 2 shows the segregation 35000000 candidates who were present in the examination. The segregation in both pie charts has been done on the basis of their highest qualification.

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What is the absolute difference in the B.Tech.'s who have filled the form and M.B.A.'s who were present in the examination?

**Options:**

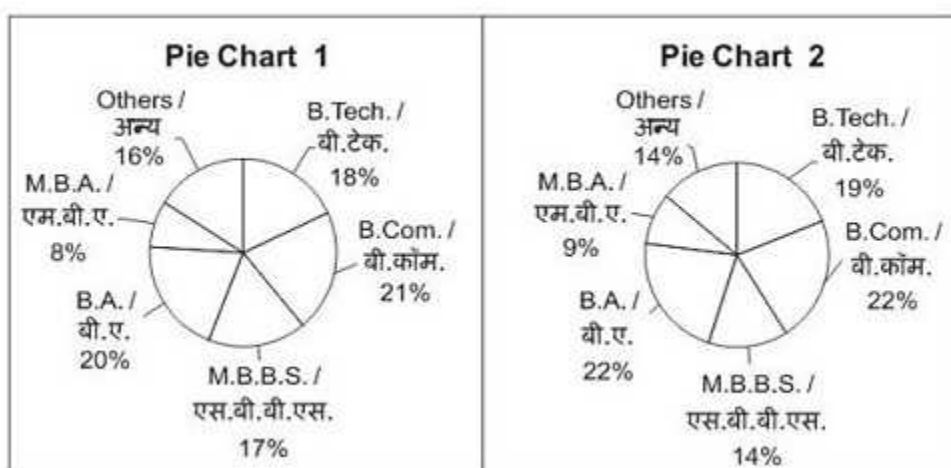
- 1) 3500000
- 2) 3000000
- 3) 4050000
- 4) 4000000

**Correct Answer:** 4050000

**QID : 74 -**

The Pie chart 1 given below shows the segregation of 40000000 candidates who have filled the form of an examination. Pie chart 2 shows the segregation 35000000 candidates who were present in the examination. The segregation in both pie charts has been done on the basis of their highest qualification.

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50% of others who have filled the form are B. Arch. and 45% of others who were present in the exam are B. Arch. How many B. Arch. candidates did not give the exam?

**Options:**

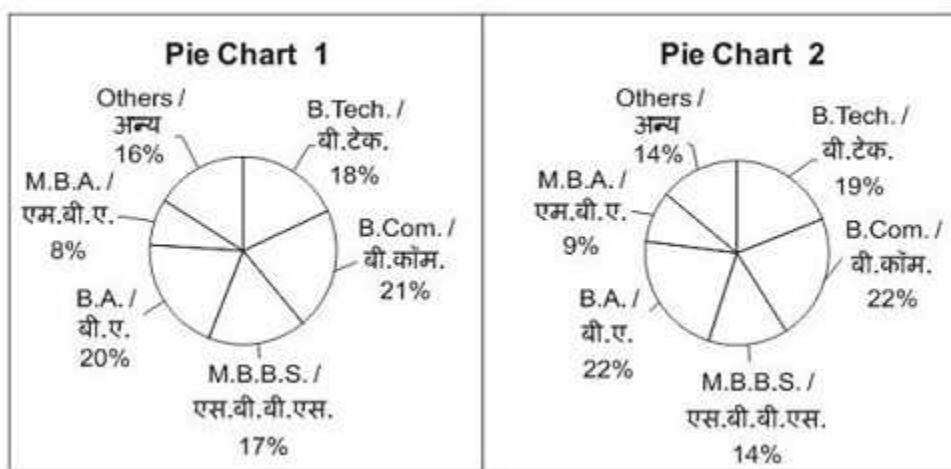
- 1) 995000
- 2) 685000
- 3) 430000
- 4) 756000

**Correct Answer:** 995000

**QID : 75 -**

The Pie chart 1 given below shows the segregation of 40000000 candidates who have filled the form of an examination. Pie chart 2 shows the segregation 35000000 candidates who were present in the examination. The segregation in both pie charts has been done on the basis of their highest qualification.

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Which highest qualification accounted for most number of absentees?

**Options:**

- 1) B.A.
- 2) Others
- 3) B.com.
- 4) None of these

**Correct Answer:** None of these



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