Actual Paper

SSC CGL

10 June 2019
Shift-2

Mathematics

SSC CGL 2018 EXAM PAPER
Held on 10 June 2019 Shift - 2
(Mathematics)

1. A train without stoppage travels with an average speed of 50 km/h, and with stoppage, it travels with an average speed of 40 km/h. for how many minutes does the train stop on an average per hour?
    (a) 15
    (b) 14
    (c) 12
    (d) 13
    Correct Answer: (c)

2. The table below shows the number of students enrolled in five colleges over the five years (2010 to 2014).

Year \ Colleges	A	B	C	D	E
2010	400	270	350	430	470
2011	430	300	330	450	490
2012	370	250	360	470	410
2013	410	310	370	420	430
2014	420	290	340	480	480

    What is the ratio off the total students enrolled in colleges A and B in the year 2012 to the total students enrolled in colleges D and E in the year 2013?
    (a) 63 : 86
    (b) 62 : 85
    (c) 62 : 88
    (d) 58 : 63
    Correct Answer: (b)

3. If $x + \dfrac{1}{x} = 3$, then $x^3 + \dfrac{1}{x^3}$ is equal to:
    (a) 27
    (b) 18
    (c) 24
    (d) 36
    Correct Answer: (b)

4. The table below shows the number of students enrolled in five colleges over the five years (2010 to 2014).

Colleges\Year	A	B	C	D	E
2010	400	270	350	430	470
2011	430	300	330	450	490
2012	370	250	360	470	410
2013	410	310	370	420	430
2014	420	290	340	480	480

In the year 2014, what percent of students were enrolled in college C (correct to one decimal place)?
(a) 16.9%
(b) 17.3%
(c) 16.7%
(d) 17.1%
Correct Answer: (a)

5. **The difference between the compound interest and simple interest on Rs. x at 8% per annum for 2 years is Rs. 19.20. What is the value of x?**
(a) 2,800
(b) 3,200
(c) 2,500
(d) 3,000
Correct Answer: (d)

6. **In $\triangle ABC$, AD is the median and G is a point and AD such that AG : GD = 2 : 1. Then $ar\left(\triangle BDG\right):ar\left(\triangle ABC\right)$ is equal to:**
(a) 1 : 4
(b) 1 : 9
(c) 1 : 6
(d) 1 : 3
Correct Answer: (c)

7. **If $\sqrt{x}-\dfrac{1}{\sqrt{x}}=4$, then $x^2+\dfrac{1}{x^2}$ is equal to:**
(a) 322
(b) 256
(c) 326
(d) 192
Correct Answer: (a)

8. **In a circle with centre O, AB is the diameter and CD is a chord such that ABCD is a trapezium. If $\angle BAC = 40°$ then $\angle CAD$ is equal to**
(a) 20°
(b) 50°
(c) 10°
(d) 15°
Correct Answer: (c)

9. **If** $\tan\theta = \dfrac{2}{3}$, **then** $\dfrac{3\sin\theta - 4\cos\theta}{3\sin\theta + 4\cos\theta}$ **is equal to:**

   (a) $\dfrac{1}{3}$

   (b) $-\dfrac{1}{3}$

   (c) $\dfrac{2}{3}$

   (d) $-\dfrac{2}{3}$

   Correct Answer: (b)

10. **If the six digit number 15x1y2 is divisible by 44, then (x + y) is equal to:**
    (a) 9
    (b) 8
    (c) 6
    (d) 7
    Correct Answer: (d)

11. **The value of** $4.5 - (3.2 \div 0.8 \times 5) + 3 \times 4 \div 6$ **is:**
    (a) -13.5
    (b) 5.7
    (c) -8.5
    (d) 4.2
    Correct Answer: (a)

12. **If a : b = 3 : 2, then (5a + 2b) : (3a + 4b) is equal to:**
    (a) 19 : 17
    (b) 16 : 15
    (c) 17 : 14
    (d) 8 : 7
    Correct Answer: (a)

13. **The table below shows the number of students enrolled in five colleges over the five years (2010 to 2014).**

Colleges / Year	A	B	C	D	E
2010	400	270	350	430	470
2011	430	300	330	450	490
2012	370	250	360	470	410
2013	410	310	370	420	430
2014	420	290	340	480	480

    What is the average number of students studying in college D over the given years?
    (a) 450
    (b) 420
    (c) 430
    (d) 440
    Correct Answer: (a)

14. **The radius of a sphere is reduced by 40%. By what percent will its volume decrease?**
   (a) 64%
   (b) 60%
   (c) 78.4%
   (d) 72.5%
   Correct Answer: (c)

15. $\Delta ABC \sim \Delta RQP$ **and** $AB = 4cm$**,** $BC = 6cm$ **and** $AC = 5cm.$ **If** $ar(\Delta ABC) : ar(\Delta PQR) = 9 : 4,$ **then** PQ **is equal to:**
   (a) $\dfrac{20}{9} cm$
   (b) $\dfrac{10}{3} cm$
   (c) $4cm$
   (d) $\dfrac{8}{3} cm$
   Correct Answer: (c)

16. **If** $\sec 4\theta = \cos ec(\theta + 20°),$ **then** θ **is equal to:**
   (a) $18°$
   (b) $22°$
   (c) $20°$
   (d) $14°$
   Correct Answer: (d)

17. **From a point P outside a circle, PAB is a secant and PT is a tangent to the circle, where, A, B and T are points on the circle. If PT = 5 cm, PA = 4 cm and AB = x cm, then x is equal to:**
   (a) 1.75 cm
   (b) 2.75 cm
   (c) 2.45 cm
   (d) 2.25 cm
   Correct Answer: (d)

18. **Two articles are sold for Rs. 9,720 each. On one, the seller gains 8% and on the other, he loses 10%. What is his overall gain or loss?**
   (a) Rs. 380 gain
   (b) Rs. 380 loss
   (c) Rs. 360 loss
   (d) Rs. 360 gain
   Correct Answer: (c)

19. **An article is sold for Rs. 528 after successive discount of 20% and 12%. What is the marked price of the article?**
   (a) Rs. 760
   (b) Rs. 750
   (c) Rs. 740
   (d) Rs. 780
   Correct Answer: (b)

20. The value of $\sin^2 38° + \sin^2 52° + \sin^2 30° - \tan^2 45°$ **is equal to:**

(a) $\dfrac{1}{2}$

(b) $\dfrac{1}{3}$

(c) $\dfrac{1}{4}$

(d) $\dfrac{3}{4}$

Correct Answer: (c)

21. **The price of sugar is increased by 20%. A person wants to increase his expenditure by 8% only. By what percent should he decrease his consumption?**

(a) 9%

(b) 10%

(c) 11%

(d) 12%

Correct Answer: (b)

22. **If** $a + b + c = 13$ **and** $ab + bc + ca = 54,$ **then** $a^3 + b^3 + c^3 - 3abc$ **is equal to:**

(a) 273

(b) 91

(c) 793

(d) 182

Correct Answer: (b)

23. **The table below shows the number of students enrolled in five colleges over the five year (2010-2014).**

Colleges / Year	A	B	C	D	E
2010	400	270	350	430	470
2011	430	300	330	450	490
2012	370	250	360	470	410
2013	410	310	370	420	430
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The number of students studying in college E in the year 2013 is approximately what percent of the number of students studying in colleges B, C and D taken together in the year 2013 (nearest to one decimal place)?

(a) 39.1%

(b) 39.4%

(c) 38.2%

(d) 38.6%

Correct Answer: (a)

24. The average marks of 40 students was found to be 68. If the marks of two students were incorrectly entered as 48 and 64 instead and 84 and 46 respectively, then what is the correct average?

(a) 68.25

(b) 68.15

(c) 68.45

(d) 68.45

Correct Answer: (c)

25. A is 40% more efficient than B and C is 20% less efficient than B. Working together, they can finish a works is 5 days . In how many days will a alone complete 70% of that work?

(a) 7

(b) 10

(c) 9

(d) 8

Correct Answer: (d)

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