Quantitative Aptitude

CapGemini Study materials

This PDF will no Longer be useful after 31st October 2018.

Also, don't share this PDF with anyone as if they will score good marks too your percentile will get decreased

We will strongly recommend to not to share this PDF with anyone ever. Since, these questions will be repeated in exams and if you share this with anyone they will get a good percentile too and your percentile in CoCubes will get lessened.

We also strongly Recommend to not to mug up these papers but practice from these as then only theses will be helpful

The Distance can be shown as the hypotenuse of a right angle triangle. Now, we need to find the Pythagoras Triplet suitable for this. And 18, 24, 30 would be the required triplets.

So, Speed of the slower motorist = 18 kmPh.

LATEST

GENERAL QUESTIONS

1. The cost price of 10 articles is equal to the selling price of 9 articles. find the profit percent.
a. 101/9 % b. 100/9 % c. 102/9 % d. 103/9 %

Ans: 100/9 %

Let Cost Price be x and selling price be y
Then given that cost price of 10 articles is equal to the selling price of 9 articles
That means 10x=9y
Y= 10x/9
Profit percent = ((selling price – cost price)/cost price) * 100
= 100/9 %

2. The ratio of radii of two right circular cylinders is 6:7 and their heights are in the ratio 5:9. The ratio of their respective curved surface areas is
a. 14:15 b. 17:19 c. 23:29 d. 10:21

Ans: 10 : 21

Curved surface area of a cylinder = 2 * Pi * r * h
Ratio = (6/7) * (5/9) = 10:21

3. In how many ways can the 7 letters A,B,C,D,E,F and G be arranged so that C and E never together.
a. 5040 b. 6480 c. 3600 d. 1440

Ans: 3600

C and E never together = Total arrangements – C and E together
Total arrangements are 7!
C and E together = pack c and e into one unit + 5 other alphabets = 6! 2! (2! Is two arrange c and e internally)
C and E never together = Total arrangements – C and E together = 7! – 6! 2! = 3600

4. How many numbers are there in all from 4000 to 4999 (both 4000 and 4999 included) having at least one of their digits repeated?

a. 356 b. 216 c. 496 d. 504

Ans: 496

Atleast one of their digits repeated = Total numbers – None of the digits repeated
Total numbers from 4000 to 4999 = 1000
None of the digits repeated = _ _ _ _
There are total 4 places
1st place is filled with 4 only. So only one choice
2nd place is filled with any 9 digits except 4 as we have used 4 in 1st place. So 9 choices
Similarly 3rd place is filled with any 8 digits. So we have 8 choices
4th place is filled with any 7 digits. So we have 7 choices.
So total arrangements = 1 * 9 * 8 * 7 = 504
Ans= 1000 – 504 = 496

5. if 1/2x +1/4x+1/8x=14 Then the value of x is:

a. 8 b. 12 c. 4 d. 16

Ans: x = 16

6. Which of the following expressions will always be true?

(Image taken while taking Test)

Ans: D

Verify from options

8. Find the value of h[f(1,2,3), g(2,1,-2), h(1,-1,-1)].

a. 0.5 b. none c. 1 d. 0

Ans(D)

9. A trapezium with an area of 5100 cm2 has the perpendicular distance between the two parallel sides of 60m . if one of the parallel sides be 40m. find the length of the other side.

a. 130 m b. 110 m c. 120 m d. 145 m

Ans: 130 m

Area of a trapezium = (1/2) (a+b) h

10. Find the simple interest on Rs. 306.25 from March 3rd to July 27th(In the same year) at 3.75 percent.
a. Rs. 4.57 b. Rs. 4.59 c. Rs. 4.53 d. Rs 4.58

Ans: 4.59

from March 3rd to July 27th(In the same year) = 146 days
(306.25 * 146 * 3.75)/ (365 * 100) = 4.59

11. Dhruv and Naksh drive at the speeds of 36 Kmph and 54 kmph respectively. If Naksh takes 3 hours lesser than what Dhruv takes for the same distance. Then distance is :
a. 324 km b. 524 km c. 320 km d. 420 km

Ans: 324 km

Let dhruv takes t hours then naksh takes t-3 hours
Because distance is same in both cases
So 36 * t = 54 (t-3)
t=9
ans: 36 * 9 = 324 km

12. The radius of wheel of axis's car is 50 cm. What is the distance that the car would cover in 14 revolutions?
a. 11 m b. 22 m c. 33 m d. 44 m

Ans: 44 m

Distance covered in one revolution is equal to wheel surface area = 2 * Pi * r
Distance covered in 14 revolutions = 14 (2 * (22/7) * 50) = 44000 cm= 44 m

13. P can do a piece of work in 5 days of 8 hours each and Q can do in 4 days of 6 hours each. How long will they take do it working 5 hours a day?
a. 2 days b. 3 days c. 4 days d. 5 days

Ans: 3 days

P can do in 5* 8 hours= 40 hours
Q can do in = 24 hours
Working together in one hour = (1/40) + (1/24) = 1/15
Total work can be finished in 15 hours
They 5 hours a day so total number of days = 15/5 = 3 days

14. Libra had three diamond weighing equal. One of the diamond fell and broke into 4 equal pieces weighing 20gm each. what was the total weight of three diamonds.
a. 200 gm b. 280 gm c. 320 gm d. 240 gm

Ans: 20 * 4 * 3 = 240 gm

16. if the antecedent and consequent of a ratio are increased by 5 and 6 respectively then the ratio is 5:6. find the original ratio. a. 5:6 b. 1:2 c. 2:3 d. 3:4
Ans: let's say original ratio is x:y
(x+5)/(y+6) = 5/6
Then x/y = 5/6

17. Rohit and Rahul start from the same point and move away from each other at right angle. After 4 hours they are 80 km apart. if the speed of Rohit is 4 kmph more than Rahul. what is the speed of Rohit?
a. 16 kmph b. 20 kmph c. 12 kmph d. none

Ans: x is the speed of rahul then (x+4) will be rohit speed

802 = (4x)2 + ((x+4)4)2
X=12
Rohit speed = 12 + 4 = 16kmph

18. Abhimanyu and supreet can together finish a work in 50 days. They worked together for 35 days and then supreet left. After another 21 days, Abhimanyu finished the remaining work. In how many days Abhimanyu alone can finish the work?
a. 70 days b. 75 days c. 80 days d. 60 days

Ans: 35 days worked together + 21 days abhimayu worked = finished the work

35(1/50) + 21(x) = 1
X=70 days

19. if two fair dice are thrown simultaneously. then what is the probability that sum of the numbers appearing on the top faces of the dice is less than 4? a. 6/14 b. none
c. 1/12 d. 3/18
Ans: possible cases are (1,1) (1,2) and (2,1) = 3

3/36 = 1/12

20.

(Image taken while taking Test)

1. 3 individuals john wright, greg chappell and gary kristen are in the race for the appointment of new coach of team india. The probabilities of their appointment are 0.5, 0.3 and 0.2 respectively. If john wright is appointed then probability of ganguly appointed as a captain will be 0.7 and corresponding probability if greg chappell or gary kristen is appointed are 0.6 and 0.5 respectively. find the overall probability that ganguly will appointed as a captain.
a. 0.63 b. 0.35 c. 0.18 d. 0.89
Ans: 0.63
22. A man spends Rs 660 on tables and chairs. the price of each table is Rs. 150 and the price of each chair is Rs. 20. If he buys maximum number of tables, what is the ratio of chairs to tables purchased?
a. 2: 5 b. 3:5 c. 2:3 d. 3:4
4 tables + 3 chairs =660
Chairs to tables ratio is 3:4

23. two packets are available for sale.
packet a: peanuts 100 gms for Rs 48 only
packet b: peanuts 150 gms for Rs 72 only
which is a better buy?
a. both have the same value b. packet b c. data insufficient d. packet a
Ans: a. both have the same value
Packet-a : 1 gm cost = 48/100
Packet-b : 1 gm cost = 72/150

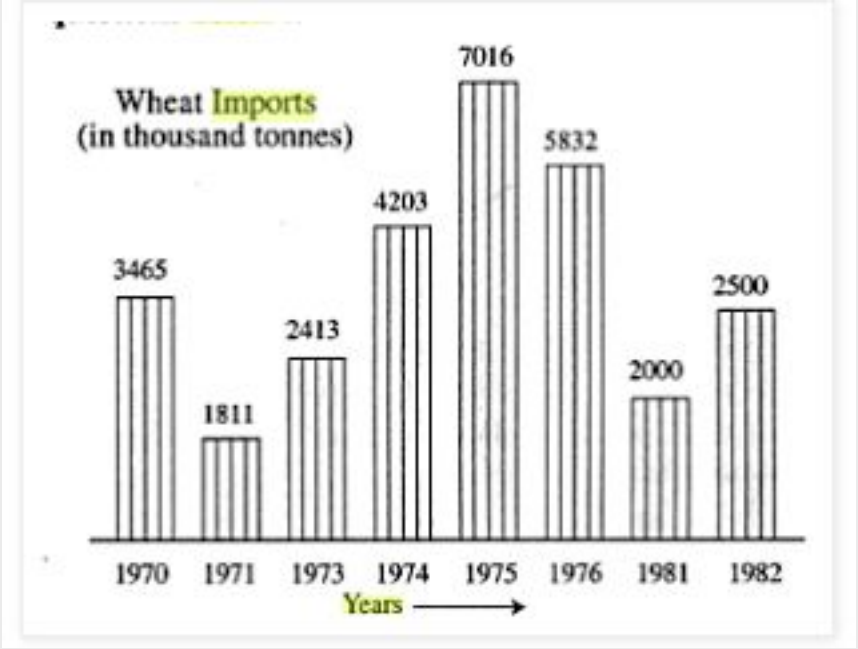
24.find the surface area of a piece of metal which is in the form of a parallelogram whose base is 10 cm and height is 6.4 cm a. 64 cm2 b. 65 cm2 c. 45 cm2 d. 56 cm2
Ans:
25. Sridevi is younger than Rajeev by 4 years. if their ages are in the ratio of 7:9. how old is Sridevi?
Ans: if Sridevi is x then Rajeev will be (x+4)
x/(x+4) = 7/9
x=14
26. A sum of Rs. 900 amounts to Rs. 950 in 3 years at simple interest. If the interest rate is increased by 4%, it would amount to how much?

27. two trains for Palwal leave Kanpur at 10a.m and 10:30 am and travel at the speeds of 60 kmph and 75 kmph respectively. After how many kilometres from Kanpur will the two trains be together?
Ans: 150 km
28. (x + 1/x) = 6 the value of (x5 + 1/x5) = ?
Ans: 6726
29. In how many ways can 44 people be divided into 22 couples?
Ans: Short cut how many ways n people be divided into n/2 couples
(n!)/{(2!)n/2 (n/2)!} so ans is b. (44!)/{(2!)22 (22!)}

30. Find the remainder when (x3 + 4 x2 + 6 x - 2) is divided (x+5)
Ans: -57
31. a solid cylinder has total surface area of 462 cm2 . If total surface area of the cylinder is thrice of its curved surface area. then the volume of the cylinder is:
a. 539 cm3 b. 545 cm3 c. 531 cm3 d. 562 cm3

Ans:539

32.



In which year was there lowest wheat import?
a. 1973 b. 1974 c. 1975 d. 1982
Ans: a
33. What is the ratio of number of years which have imports above the average imports to those which have imports below the average imports?
a. 5:3 b. 2: 6 c. 3: 8 d. none
Ans: d
34. The increase in imports in 1982 was what percent of the imports in 1981?
a. 25% b. 5% c. 125% d. 80%
Ans: a
35. The section of a solid right circular cone by a plane containing vertex and perpendicular to base is an equilateral triangle of side 10 cm. find the volume of the cone? a. 221.73 cm3 b.223.73 cm3 c.228.73 cm3 d.226.61 cm3

36. A sum of Rs 468.75 was lent out at simple interest and at the end of 1 year and 8 months, the total amount of Rs 500 is recieved. find the rate of interest. a. 2% b. 4% c. 1% d. 3%
Ans: 4%
37.Consider the following two curves in the X-Y plane
y=(x3+x2+5)
y=(x2+x+5)
Which of the following statements is true for -2<= x <=2?
a. The two curves do not intersect. b. The two curves intersect thrice.
c. The two curves intersect twice. d. The two curves intersect once.
Ans: b

38.Give a model for maximising the profit in a company or minimising the loss in a conflict with optimisation techniques.where quantity f(x) is referred to as the object function while the vector 'x'consists of decision variables.
A. None of the mentioned options. B. x* =arg min f(x) C. x* =arg max f(x) D. x* =an-1+an arg min f(x)n

39. A positive integer is selected at random and is divided by 7,what is the probability that the remainder is 1?
A. 3/7 B. 4/7 C. 1/7 D. 2/7
Ans: 1/7
40. A mixture of 40 litres of salt and water contains 70%of salt.how much water must be added to decrease the salt percentage to 40%? A. 40 litres B. 30 litres C. 20 litres D.2 litres
Ans: x=30

41. Anirudh,Harish and Sahil invested a total of Rs.1,35,000 in the ratio 5:6:4 Anirudh invested has capital for 8 months. Harish invested for 6 months and Sahil invested for 4 months. If they earn a profit of Rs.75,900,then what is the share of Sahil in the profit? A. Rs.12,400 B. Rs.14,700 C. Rs.15,800 D. Rs.13,200
Ans: 13,200

42. A man sets out to cycle from Delhi to Rohtak and at the same time another man starts from Rohtak to cycle to cycle to Delhi. After passing each other they completed their journey in (10/3) hours and (16/3) hours respectively.At what rate does the second man cycle if the first cycle at 8 kmph?
A.6.12 kmph B.6.42 kmph C. 6.22 kmph D. 6.32 kmph
Ans: 6.32

43.Two trains are travelling in opposite directions at uniforms speeds of 60 kmph and 50 kmph.They take 5 seconds to cross each other.If the two trains travelled in the same directions.then a passenger sitting in the faster moving train would have overtaken the other than in 18 seconds.what are the lengths of the trains?
A. 87.78 m and 55 m B.112 m and 78 m C.102.78 m and 50 m D.102.78 m and 55 m
Ans: C

44. A cube is given with an edge of 12 units.it is painted on all faces and then cut into smaller cubes of edge of 4 units. How many cubes will have 2 faces painted? A. 2 B. 12 C. 8 D. 0

45.Two numbers are in the ratio xy,when 2 is added to both the numbers.the ratio becomes 1:2.when 3 is subtracted from both the numbers. The ratio becomes 1:3.Find the sum of x and y. A. 27 B. 24 C. 28 D. 26
Ans: 26

46. To earn extra profit,a shopkeeper mixes 30 kg of dal purchased at Rs.36/kg and 26 kg of dal purchased at Rs.20/kg.What will be the profit that he will make if he sells the mixture at Rs.30/kg?
A. Rs.60 B. Rs.80 C. Rs.50 D. Rs.100
Ans: 80

47. There are 4 boys and 3 girls.they sit in arrow randomly.what is the probability that all girls are together?
A. 1/14 B. 2/14 C. 5/14 D. 3/14
Ans: 2/14

48. An oblong piece of ground measures 19m 2.5 dm by 12m5dm.Fom centre of each side of the ground,a path 2 m wide goes across to the center of the opposite side.What is the area of the path?
A. 59.5 m2 B. 54 m2 C. 43 m2 D. 34 m2
Ans: 78.54

49. The circumference of the wheel of a truck is 1 meter.To cover a distance of 1.5 km.the number of revolutions made by the wheel are: A. 3000 B. 37 C. 1500 D. 750
Ans: 1500 revolutions

50. If (x+(1/x))=4,the value of (x5+(1/x5)) is: A. 724 B. 500 C. 752 D. 525
Ans: 724

Read the information given below in the table and answer the question that follow.

Read the information given below in the tabke and answer the question that follow.

Year	Gross turnover in lakh	Profit before int. and depr.	Interest in lakh	Depreciation in lakh	Net profit Lakh
1980-81	1380	380.92	300.25	69.90	10.67
1981-82	1401	404.98	315.40	71.12	18.46
1982-83	1540	520.03	390.85	80.12	49.16
1983-84	2112	599.01	444.44	88.88	65.59
1984-85	2520	811	505.42	91.91	212.78
1985-86	2750.99	920	600.20	99	220.80

Read the information given below in the tabke and answer the question that follow.

Year	Gross turnover in lakh	Profit before int. and depr.	Interest in lakh	Depreciation in lakh	Net profit Lakh
1980-81	1380	380.92	300.25	69.90	10.67
1981-82	1401	404.98	315.40	71.12	18.46
1982-83	1540	520.03	390.85	80.12	49.16
1983-84	2112	599.01	444.44	88.88	65.59
1984-85	2520	811	505.42	91.91	212.78
1985-86	2750.99	920	600.20	99	220.80

51.During which year did the net profit exceed Rs.1 crore for the first time?
A.1985-86 B. 1983-84 C. 1984-85 D. None of the mentioned options
Ans: C

52.During which year was the "gross turnover" closest to thrice the profit before interest and depression?
A. 1985-86 B. 1983-84 C. 1984-85 D. None of the mentioned options.
Ans: A

53. During which of the given years did the net profit from the highest proportion of the profit before interest and depression? A. 1985-86 B. 1983-84 C. 1984-85 D. None of the mentioned options.
Ans: C

54. A sum was put at simple interest at certain rate for 3 years. Had it been put at 1% higher rate it would have fetched Rs. 63 more. The sum is: A. Rs. 2,400 B. Rs. 2,100 C. Rs. 2,200 D.Rs. 2,480
Ans: 2,100

55.For what value of "k" will the equation (2kx2 + 5kx +2)=0 have equal roots?
A. 2/7 B. 9/4 C. 16/25 D. 7/18
Ans: C

56.In triangle PQR, PQ=6 cm,PR=8 cm and QR=12 cm. Calculate the area of the triangle PQR.
A. 23.33 cm2 B. 17.5 cm2 C. 21.33 cm2 D. 28.67 cm2
ANs: 21.33

57. A company named "Dyona Automobiles"has received an order for 5,000 widgets for a total sale price of $5,000 and wants to determine the gross profit that will be generated by completing the order.

The other details for producing 100,000 widgets are given as follows:
1.Raw Materials Costs-$10,000
2.Direct Labor Costs-$50,000
A. $5,000 B. $4,000 C. $3,000 D. $2,000

58. If m=(2-√3),then the value of (m6+m4+m2+1) /m3 is:
A. 64 B. 56 C. 69 D. 52

59. 28 children can do a piece of work in 50 days.how many children are needed to complete the work in 30 days?
A. 49 B. 40 C. 35 D. 45
Ans: 49

60. A certain sum of money becomes Rs.750 in 2 years and becomes Rs.873 in 3.5 years.Find the sum and rate of interest. A. Rs.400, 13% p.a B. Rs.500,11%p.a C. Rs.630,12%p.a D. Rs.600,13%p.a

Ans: 586, 14%

61. Henna invested Rs.5000 at 12% simple interest p.a.the interest she will receive after 2 years is:
A. Rs.800 B. Rs.1000 C. Rs.600 D. Rs.1200
Ans: (5000*12*12)/100= 1200

62.A bag contains 3 red,5yellow and 4 green balls.3 balls are drawn randomly,what is the probability that the ball drawn contains no yellow ball? A. 9/44 B. 37/44 C. 43/44 D. 7/44
Ans:
Probability = 35/12C3 =7/44

63. If a2+b2-4(a+b)= -8,then the value of (a-b) is: A. 4 B. 0 C. 2 D. 8

64. A lent Rs.600 to b for 2 years and Rs.150 to C for 4 years and receive all together Rs.90 as both as interest.Find the rate of interest. A. 4%p.a B. 2%p.a C. 5%p.a D. 3%p.a
Ans: 5%

65. If the perimeter and the diagonal of a rectangle is 18 cm and √41 cm respectively.Calculate the area of the rectangular field. A. 25 cm2 B. 29 cm2 C. 18 cm2 D. 20 cm2
Ans:
2(a+b) = 18

(a+b)=9
√ (a2 + b2) = √41
(a+b)2 = a2+b2 + 2ab
ab=20

66. A,B, and C enter into a partnership and their shares are in the ratio 1/2 : 1/3 : 1/4.After 2 months,A withdraws half of his capital and after 10 months,a profit of RS. 378 is divied among them. What is B's share?
A. Rs.144 B. Rs.156 C. Rs.166 D. Rs.129

67. If a:b =4:1,then √(a/b)+ √(b/a) is :
A. 1 B. 4/5 C. None of the mentioned options D. 5/4
Ans: 5/2
68. A cube is given with an edge of 12 units.It is painted on all faces and then cut into smaller cubes of edge of 4 units.How many cubes will have 2 faces painted?
A. 8 B. 12 C. 0 D. 2

69.Find the area of Rhombus one of whose diagonals measures 8 cm and the other 10 cm.
A. 47 cm2 B. 34cm2 C. 40 cm2 D. 64cm2

70. Rs 5000 was divided among 5 men, 6 women and 5 boys, such that the ratio of the shares of men, women and boys is 5:3:2 what is the share of the boy?
a. 200 b. 100 c. 250 d. 150
Ans: 200
The ratio of shares of groups of men, women and boys = 5 :3 :2
So share of boys is = (2/10)*5000 = 1000
Share of a boy= 1000/5 = 200

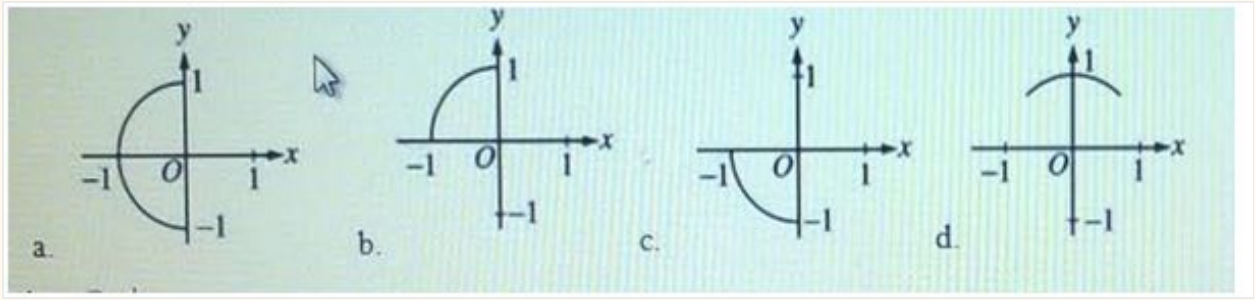
71. If 28 Men working 6 hours a day can finish a work in 15 days. In how many days can 21 men working 8 hours per day will finish the same work?
a. 24 days b. 21 days c. 18 days d. 15 days
Ans: 15 days
Work = 28 * 6 * 15 --- (1)
Work = 21 * 8 * x -- - (2)
Equating (1) and (2)
28 * 6 * 15 = 21 * 8 * x
X= 15

72. A train is running at the rate of 60 kmph. A man is also going in the same direction on a track parallel to the rails at a speed of 45 kmph. If the train crosses man in 48 seconds, the length of the train is?
a. 50m b. 150m c. 100m d. 200m
Ans: 200 m
Speed = distance/time;
Distance= speed * time
= (60-45) * 48 * (5/18) (relative speed in same direction is s1-s2 and kmph to m/sec 5/18)
= 200m

73. Find the last two digits of the expansion (212n-64n) when n is a positive integer?
a. 5 b. 11 c. 10 d. 00
Ans: 00
Assume n=1
Then answer is 00

74. Read the information given below and answer the questions that follow
(a$b) = (a+b)/2
(a&b) = (a2-b2)
(a?b)=(a-b)/2
What is the value of [(22$4)&(25?15)]?
a. 154 b. 144 c. 112 d. 125

Ans: 144
75. Which of the following graph indicates the graph of {(sin t, cos t):- $\pi/2 \leq t \leq 0$} in xy-plane?



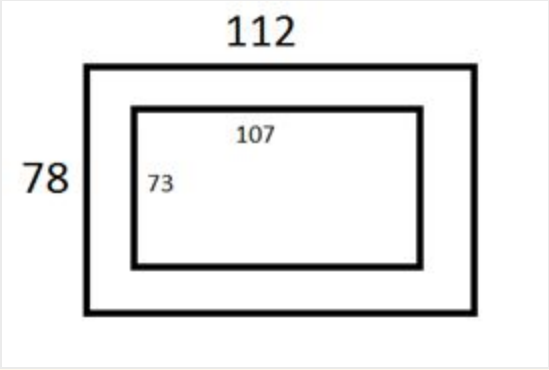
a. D b. C c. B d. A
Ans: B
When t = -90 then (sin t, cos t) = (-1,0)

When t=0 then (sin t, cos t) = (0,1)
Plot above two points in x-y plane.
Answer: Option (C)

Ans: B
When t = -90 then (sin t, cos t) = (-1,0)
When t=0 then (sin t, cos t) = (0,1)
Plot above two points in x-y plane.
Answer: Option (C)

76. There are 4 boys and 3 girls. They sit in a row randomly, what is the probability that all the girls are together?
a. 1/14 b. 3/14 c. 2/14 d. 5/14
Ans: 2/14
Probablity = (favourable cases / total cases)
Favourable cases = girls together.
= 4 boys + 1 (assume 3 girls as 1) = 5! * 3! (girls can be arranged in 3! Ways)
Total cases = 7!
So probability= (5! * 3!)/7! = 1/7

77. The simple interest on Rs. 4,500 for 4 years at 15% p.a is:
a. Rs. 2700 b.Rs. 2500 c. Rs. 2300 d. Rs. 3000
Ans: 2700
Simple interest = (P * T * R)/ 100
Ans: 2700



78. A rectangular grassy plot is 112 m by 78 m. It has a gravel path 2.5 m m wide all around it on the inside. Find the area of the path

a. 952 m2 b. 926 m2 c. 912 m2 d.950 m2

Ans: 925 m2

This question is very very important

Area of the path = (112*78) – (73 * 107) = 925m2

79. A cone of height 21 cm has a volume of 2200 cm3. Determine the base radius of the cone

a. 2.5 cm b. 10 cm c. 7.5 cm d. 5 cm

Ans: 10 cm

Volume of cone = (1/3) Pi * r2 * h = 2200

r=10 cm

80. what is the radius of the circular plate of thickness 1cm made by melting a sphere of radius 3cm?

A. 6 cm B. 5 cm C . 4 cm D.7 cm

Ans: 6 cm

Volume of a sphere = (4/3) * pi * r3 --(1) (here r =3cm)

Volume of circular plate of thickness 1 cm is = pi * r2 * h -- (2) (here h=1cm that is thickness)

Equating (1) and (2)

r=6cm

81.what is the ratio of the surface area formed by placing 3 cubes adjacent to the sum of the individual surface area of these 3 cubes?

A.7:9 B.27:23 C.49:81 D.9:7

ANS: Volume of a cube = 6a2

Volume of 3 cubes = 18a2

Volume of three cubes placing adjacent each other = 6a2+5a2+5a2= 16a2

Ratio= 16/18 = 8:9

82.At what rate percent CI does a sum of money become nine fold in 2 years?

a.100% p.a b.300% p.a c.400% p.a d.200% p.a

Ans: . P(1+(r/100))2 = 9P

r=200%

83.x,y,z rent an area for Rs.10,000 per annum.X puts 312 horses in the area for 4 months,y puts 124 horses in the area for 2 months and puts 520 horses for 6 months.what % of the total question should y pay?

a.27.03% b.67.59% c.5.37% d.16.7%

Solution: rent for an year =10,000

rent for a month=10,000/2=833

for 2 months =(1665/10,000)*100=16.7%

84.the SI on a sum of Rs.12,000 at a rate of 15% p.a is Rs.5,400.determine the time for which the sum is borrowed,
a.2 years b.3 years c.1.5 years d.2.5 years
Solution: SI=PTR/100
5400=(1200*15*T)/100
T=3
85.In a single throw of a fair dice,what is the probability that the no appearing on the top face of the dice is more than than 2?
a.1/3 b.3/4 c.2/3 d.1/2
Ans: here,probability more than that the no is more than 2 is 4.
so, we know that the formula..p(x)=no.of favourable cases/no. of outcomes
so,it is 4/6=2/3 option C.

86.if x=12 , y=4, then find the values of (x+y)x/y
a. 8009 b.4096 c.none d.1024
Ans:Here,12+4 is 16 and it is written as 2 power4 ,then 12/4 is 3,so now it is 2 power 12 so ans is 4096.

87.The salary of ramu is 3 times the salary of raju's salary increases by 20% every month &ramu's salary decreases by 10% every month,what is the ratio of salary of raju to ramu after 2 months?
a.15:24 b.17:28 c.14:23 d.16:27
Ans: let salary of raju is P
Then ramu's salary is 3P
After 2 months raju's salary becomes P(1+20/100)2 -- (1)
After 2 months ramu's salary becomes 3P(1+20/100)2 --(2)
Ratio= (1)/(2) = 16:27

88.There are 2 vessels which are filled with milk of 2 qualities worth Rs.10 per litre and Rs.11 per litre.In what approximation ratio these two be mixed to get a new quality of milk of worth Rs.10.67 per litre?
a.12:3 b.1:3 c.1:2 d.2:1
ans:1:2
(10*1+11*2)/1+2=10.66666(approx 10.67) by option verification.

89. A sum of Rs.5000 was divided among P, Q and R in the ratio of 2:3:5. If the amount of Rs 500 was added to each, what will be their new ratio?
Options: a) 3:4:6 b) 3:5:4 c) 3:4:5 d) 2:3:4
Divide 5000 in the ratio of 2:3:5 then 1000, 1500, 2500
Add 500 to 1000, 1500 and 2500 then 1500: 2000: 3000
3:4:6

90. There are two vessels which are filled with milk of two qualities worth Rs10 per liter and Rs 11 per liter. In what approximate ratio, these two be mixed to get a new quality of milk of worth Rs 10.67 per liter?
Options: a) 1:3 b) 1:2 c) 2:3 d) 2:1
Ans: 10 * x + 11 * y = (x+y) * 10.67 (Assume x & y quantity in vessels 1 & 2 respectively)
Solve for x/y = 1:2

91. The retail price of a toothpaste of 140 grams is Rs 40, the shopkeeper gives a toothbrush whose actual price is Rs 10, free with it and still gains 25% . The cost price of the toothpaste is :
Options: a) Rs.36 b) Rs.24 c) Rs. 30 d) none of the mentioned options.
Ans: Selling price = 40 – 10 = 30 Rupees.
Let cost price =x;
Selling price = cost price + profit on cost price
30 = x + 25% of x;
X= 24

92. The section of a solid right circular cone by a plane containing vertex and perpendicular to base is an equilateral triangle of side 10 cm. Find the volume of the cone?
Options: a) 226.61 cm^3 b) 223.73cm^3 c) 228.73cm^3
Answer is 326.61 cm3

93. 5 boys and 5 girls were made to sit around a round table alternatively. How many of such arrangements are possible?
Options: a) 14400 b) 7200 c) 28800 d) 1152
Ans: In general, the number of ways of arranging n objects around a round table is (n-1)!
Arranging girls is 4! Then arranging boys is 5! So total is 2880

94. Determine the speed of a train of length 240 meters if it crosses a pole in 15 seconds.
Options: a) 44.4 kmph b) 57.6 kmph c) 33.3 kmph d) 22.2 kmph
speed = distance/ time
Ans: 57.6

95. For p= 5 and q= -5, the value of (9p^2+36pq+36q^2) is:
Options: a) 900 b) 15 c) 30 d) 225
Ans: (3p + 6q)2
Ans: 225

96. For all integral values of n, the expression ((7^2n)-(3^3n)) is a multiple of:
Options: a) 10 b) 31 c) 12 d)22
Ans: take n=1 then verify options
Ans: 10

97. A sum of money at CI amounts to thrice itself in three years. In how many years will it be 9 times itself?
Options: a) 6years b) 2 years c)5 years d) 3 years
Ans: P(1+r/100)3= 3P
So (1+r/100)3=3
To become 9 times squaring on both sides
(1+r/100)6 = 9
So 6 years

98. A 3 digit number is formed with the digits 1,3,6,4 and 5 at random with no digits being repeated in the same number. What is the chance that the number formed is divisible by 2?

Options: a) 4/5 b)3/5 c)2/5 d)1/5
Ans: Total cases = 5*4 * 3 = 60

_ _ _
3rd digit should be filled either by 6 or 4 so two ways
First place is filled with 4 ways as we have used one digit in 3rd place
Second digit is filled with 3 ways.
So favourable cases = 2 * 4 * 3= 24

Probability = 24/60

99.

TOTAL SALES IN 2013 = Rs. 500 lakhs
TOTAL SALES IN 2014 =Rs. 600 lakhs.
100. What is the difference in revenue earned by stumps in two years?
Options: a) 16 lakhs b) 10 lakhs c) 14 lakhs d) 12 lakhs
Ans: 14 lakhs
101. The revenue earned by pads in the year 2013 is what percent of the revenue earned by gloves in the year 2014? Options: a) 83.3% b) 58.5% c) 43.3% d) 72.5%
Ans: 83.3%
102. What is difference between the revenue earned by pads in 2014 and revenue earned by balls in 2013?

Ans: 7 lakhs

103. W and Z throw one dice for a stake of Rs.40, which is to be won by the player who first throws a one. The game ends when the stake is won by W or Z if W has the first throw, what are the chances that the stake is won by Z?
a.5/11 b.1/2 c.1/3 d.5/12

Adminstrator-signed Rules by Regulatory Stages,2005-2010

104. What is the average of NPRM, Direct Final, and Final rules in 2008?

a.52.33 b.45.33 c.54.33 d.40.33
Ans: 45.33
105. What is the ratio of 2006 NPRM to 2005 Final Rules?
a.none of the mentioned options b.79:41 c.71:49 d.49:71
Ans: 71.49
106. what is the average of 2005,2008 and 2010 for all stages?
a.38.33 b.39.46 c.52.57 d.none of the mentioned options

107. Six different objects were divided among 4 people. In how many ways it can be done, if there is no restriction on minimum number of objects that each person can get?
a.23 b.72 c.64 d.84
Ans: (6+4-1)c (4-1) = 9C3 = 84

108. A Rectangular hall 12m long and 10m broad is surrounded by a verandah, 2m wide. Find the area of the verandah. a. 105m2 b. 104m2 c. 89m2 d. 123m2

Ans: Similar to Q.no 78 : (16*14) – (10*12) = 104

109. Two circular cylinders of equal volume have heights in the ratio of 1:2. Ratio of their radii is:
a. 1.414:1 b. None of the mentioned Options c.1.69:1 d.1.732:1
Ans: 1.414 : 1

110. If s(s+s1+s2)=9,s1(s+s1+s2)=16 and s2(s+s1+s2)= 144, then the what is the value of “s”?
a.7/11 b.1/11 c.11/13 d.9/13
Ans: Let s+s1+s2 =x;
Then s(x)=9 --(1)
S1(x)=16 -- (2)
S2(x)=144 –(3)
Add above three equations s(x)+S1(x)+S2(x)=9+16+144
x(s+s1+s2) = 169
x2=169
x=13
substitute x value in equation(1) so s=9/13

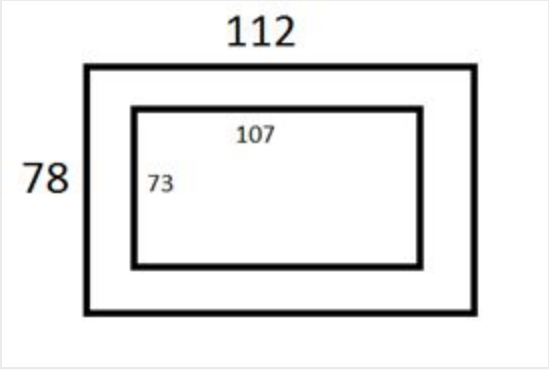
111. Atul sold two mobiles for Rs.9900 each. At one mobile, he gained 10% and on other he lost 10%. Find his gain or loss in transaction. a.Loss 1% b.Neither loss Nor gain c.Gain 1% d.none of the mentioned options
Ans: When a person sells two similar items, one at a gain of say x%, and the other at a loss of x%, then the seller always incurs a loss given by:
Loss % = X*X/100
Ans: Loss 1%

112. three pipes can fill the tank in 18 hours. One of the pipes can fill it in 18 hrs and the other pipe can empty in 9 hours. At what rate does the third pipe work?
a. Waste pipe emptying the tank in 18 hours b. Filling the tank in 9 hours
c. Filling the tank in 18 hours d. Waste pipe emptying the tank in 9 hours
1/18 = 1/18 – 1/9 +x
X=1/9
Ans: Filling the tank in 9 hours

113. A rectangular grassy plot is 112m by 78m.It has a gravel path 2.5m wide all around it on the inside. Find the cost of constructing it at Rs. 2 per m2.

a. Rs. 2,300 b. Rs. 1,567 c. Rs. 1,850 d. Rs. 2,355
Similar Q.no 78.

This question is very very important



Area of the path = (112*78) – (73 * 107) = 925m2
Cost= 925 *2 = 1850

114. A man spend Rs. 660 on tablets and chairs, the price of each table being Rs.150, and the price of each chair being Rs.20. If he buys the maximum number of tables, what is the ratio of chairs to tables purchased?
a. 3:4 b. 2:3 c. 2:5 d. 3:5
4 tables + 3 chairs =660
Chairs to tables ratio is 3:4

115. A Shopkeeper allow a discount of 20% on the marked price but charges 5% sales tax on the marked price and 5% service tax on the discounted price. If the customer pays Rs. 2670 as price including tax, then what is marked price of the item?
a.3245
let x be the marked price
x – 20% of x + 5% of sales tax + 5% of (x – 20% of x) = 2670
x=3000

116. There are 4 boys and 3 girls. They sit in a row randomly what is the probability that all girls are together?
A. 1/14 B. 3/14 C. 2/14 D. 5/14
see solution for Q.no 76 (ans : 2/14)
117. The simple interest on Rs.4,500 for 4 years at 15% p.a. is:
A. Rs. 2700 B. Rs. 2500 C. Rs. 2300 D. 3000
Ans: 2700
118. A rectangular grassy plot is 112 m by 78 m. It has a gravel path 2.5m wide all round it on the inside. Find the area of the path A. 925 m2 B. 926 m2 C. 912 m2 D. 950 m2
Ans: Q.no 78 (Ans: 925)

119. A cone o height 21cm has a volume of 2200 cm3.Determine the base radius of the cone.
A. 2.5 cm B. 10 cm C. 7.5 cm D. 5 cm
1/3 * Pi * r2 * h = 2200
r=10

120. 3 individuals John Wright, Greg Chappell and Gary Kristen are in the race for the appointment of new coach of team India. The probabilities of their appointment are 0.5, 0.3, 0.2 respectively.If John Wright is appointed then probability of Ganguly appointed as a captain will be 0.7 and the corresponding probability if Greg Chappell or Gary Kristen is appointed are 0.6 or 0.5 respectively. Find the overall probability that Ganguly will be appointed as a captain? A. 0.18 B. 0.35 C. 0.63
D. 0.89

Ans: 0.5 * 0.7 + 0.3 * 0.6 + 0.2 * 0.5 = 0.63

121. Study the following data carefully and answer the question that follows.
A%B = (A+B)2
A#B = (A2-B2)
A?B = (A-B)2
Question: Find the value of 5?(6%2)

A. -3481 B. 59 C. 3481 D. -59

123. what is the difference in revenue earned by stumps in two years?
A . 12 lakhs B . 14 lakhs c. 16 lakhs d. 10 lakhs

124. the revenue earned by pads in the year 2013 is what percent of the revenue earned by gloves in the year 2014?
A. 58% B. 83% c.43.3% D.72.2%

125. what is the difference between the revenue earned by pads in 2014 qnd revenue earned by balls in 2013?
A.3 lakhs B. 7 lakhs C. 5 lakhs D. 1 lakh

126. what will be unit's digit in the result of the expression 365 * 653 *95 ?
A. 6 B. 2 C.3 D.7
Ans: 2

127. if x and y throw a pair of dice alternately .x wins if the throws 4 before y throws 5 and y wins. If she throws 5 before x throws 4. Find y's chance of winning if x makes the first throw
A.1/3 B.1/2 C.5/11 D.5/12

128. A train 1200m long crosses a platform in 1.5 min at a speed of 54 kmph . what is the length of the platform?
A.150m B.120m C.175m D.100m
Ans: A

129. a cow gives 4 liters of milk daily ,but this is only (1/3)rd of what a herd of cows gives daily.if 24 liters of milk is collected in 2 days ,the number of cows in the herd is
A. 6 B. none of the mentioned options C. 3 D. 2
Ans: 3

130. if (x+1/X) = 6, the value of (X5+1/x5) is
A.7302 B. 5473 C. 6726
Ans: . Shortcut : let (x+1/x) = a
Then (x5+1/x5) = a5-5a3+5a
So answer : 6726

131. two trains of the same length but with different speeds pass a static pole in 4 sec and 5 sec respectively. In what time will they cross each other .when they are moving in the same direction?
A.3.22 sec B. 4.98 sec C. 4.44 sec D. 4.22 sec
Ans: Same direction : relative speed is s1-s2
Opposite Direction: relative speed is : s1+s2
S1= l/4
S2=l/5
Same direction: time= distance/speed
=2l/s1-s2;
Substitute s1 and s2 values in above equation, we get 40 seconds
But no option contains this answer.
Assuming that given question is for opposite direction then we get answer as 4.44 sec.
So choose 4.44 seconds as answer

132. A person covers a distance in 40 min .if he runs at a speed 45 kmph on a average . find the speed at which he must run to reduce the time of journey to 30 min
A. 40 kmph B. 30 kmph C. 50 kmph D. 60 kmph
Ans: 40 * 45 = 30 * x;
Find x value .
Ans: 60

133. a sum of RS. 5000 was divided among P,Q and R in the ratio 2:3:5. If the amount of RS.500 was added to each ,what will be their new ratio ?
A. 3:4:6 B. 3:5:4 C. 3:4:5 D. 2:3:4
Ans: Divide 5000 in the ratio of 2:3:5 then 1000, 1500, 2500
Add 500 to 1000, 1500 and 2500 then 1500: 2000: 3000
3:4:6

134. there are two vessels which are filled with milk of two quantities worth RS.10 per litre and RS. 11 per litre .in what approximate ratio these two be mixed to get a new quality of milk of worth RS.10.6 litre?
A. 1:3 B. 1:2 C. 2:3 D. 2:1
Ans: 10 * x + 11 * y = (x+y) * 10.6 (Assume x & y quantity in vessels 1 & 2 respectively)
Solve for x/y = 2:3

135. A man walking with a speed of 5kmph reaches his target 5min late. If he walks at a speed of 6kmph, he reaches on time. Find the distance of the target from this house.
2.5km 3km 1.5km 4km
Ans: distance= 5 * (t+5/60)
Distance = 6* t
Equate above two equations
t=5/12
distance = 6*(5/12) = 2.5 km

136. If m=3-2 , then the value of -(1/) is:
1 2 2 -1
Ans: . -(1/) = x
Squaring on both sides
m+1/m-2=x2
so x=2

137. If radius of circle is increased by 5% then the percentage increase in its area is:
8.25% 10.25% 25% 9.32%
Ans: let's original radius is 100
Then new radius is 105
Original area= Pi*100*100 = x
New area is = Pi*105*105 = y
%increase= ((y-x)/x)*100
Ans= 10.25

138. What is the total number of ways of selecting at least one object from 2 sets of 10 distinctly different objects?
220-1 100 (210-1)2 120

139. Read the info given below and answer the question that follow:
(a$b)=(a+b)/2
(a&b)=(a2-b2)
(a?b)=(a-b)/2

What will be the value of((a$b)/(a&b))2-(a$b)(a?b) at a =4 and b=6?
95/16 65/16 31/16 81/16
Ans: 81/16

140. Determine the speed of train of length 180cm if it crosses a pole in 5 sec.
190kmph 135.8kmph 129.6kmph 150.5kmph
Ans: 129.6 kmph

141. A certain number of men can do a work in 75days. If there were 6more men, it could be completed in 15 days less. How many men were there in the beginning?
30 men 27 men 24 men 21 men
Ans: x * 75 =(x+6) * 60
Find x.

Ans= 24

142. The break up of energy consumption in various parts of a building, for the years 1990 and 2000 , is given in the pie charts below. Study the pie-charts carefully and answer the following questions :

143. Between 1990 and 2000 , what was the increase in energy use for the PC Room, Meeting Rooms space combined?
188 kWh 50 kWh Cant be determined 184 kWh
Ans: 50 KWH
144. If the total energy usage today is 6% lower than it was in 2000, by how much has today's usage reduced when compared to 1990? 0.178 0.171 Cant be determined 0.829
Ans: 0.171
145. Which space experienced the smallest change in energy use between 1990 an 2000?
Meeting Rooms PC Room Print Room Kitchen
Ans: Meeting rooms
146. 3 individuals john wright, greg chappell and gary kristen are in the race for the appointment of new coach of team india. The probablities of their appointment are 0.5, 0.3 and 0.2 respectively. If john wright is appointed then probability of ganguly appointed as a captain will be 0.7 and corresponding probablity if greg chappell or gary kristen is appointed are 0.6 and 0.5 respectively. find the overall probability that ganguly will appointed as a captain.
a. 0.63 b. 0.35 c. 0.18 d. 0.89
Ans: 0.63
147. we know that p/q=r/s multiplies p/r=q/s.this property is known as:
a.componendo b.dividendo c.alterendo d.none of these

148. a polygon has 77 diagonals.Determine the number of sides.
a.15 b.12 c.17 d.14
Ans:

149. if(m^4+m^-4)=47,then determine the value of (m+m^-1).
a.3 b.1 c.-1 d.0
Ans: 3
150. P lends Rs 3000 to Q and certain sum to R at 5% P.a Simple Interest. If after 4 years P altogether receives Rs 1200 as interest from Q and R then what was the sum lent to R?
a. 750 b. 1000 c. 500 d. 240
Ans:
151. The direct distance between City A and City B is 300 miles. The direct distance between city B and City C is 400 miles. What could be the direct distance between city C and City A?
a. Between 100 and 700 b. Less than 100 c. More than 900 d. More than 700
Ans: . There are two possibilities with the given data.

So answer is : a. Between 100 and 700

152. If the curved surface area of a cone is twice that of another cone and slant height of the second cone is twice that of the first. Find the ratio of the area of their bases.
a. 2:3 b. 1:4 c. 4:1 d. 16:1
Ans: Curved surface area of a cone = Pi * r * l;
2/1=(r1*1)/ (r2 * 2) so r1/r2 = 4/1
Answer: 4:1

153. What is the least number which when divided by 3,8,11,21 and 27 leaves a remainder of 5 in each case
a. 149688 b. 16637 c. 125466 d. 1253
Lcm of (3,8,11,21,27) = 16632
Add 5 to 16632 = 16637

154. (x4+1/x4) = 14 then (x-1/x)2 is
a. -2 b. 2 c. 4 d.-4
Ans: 2
155. A cone of slant height 20 cm has a curved surface area of 880 cm2. Determine the base radius of the cone.
Curved surface area of a cone = Pi * r * l;
880= (22/7) * r * 20
So r = 14

156. The ratio of three numbers is 4:5:6 and sum of their squares is 7700. What is the sum of the numbers.
a. 100 b. 90 c. 120 d. 150
let the numbers be 4k,5k,6k

Sum of their squares is 7700
16k2 + 25k2 +36k2 =7700
K=10
Sum of their numbers= 4k+5k+6k = 15k = 150
Ans: 150

157. Two cone have their heights in the ratio 2:1 and their base radius in the ratio 1:4 . what will be their volumes ratio?
a. 2:1 b. 3:2 c. 2:3 d. 1:2
cone volume = (1/3) * Pi * r * r * h
So volumes ratio = 1:8

158. if m=2-√3 then (m6+m4+ m2+1)/m3 is
Apply denominator to individual terms then give equation becomes
m3+m+1/m+ 1/m3
1/m= 2+√3
Ans: 56

159. Anitha has 3 novels and 4 dictionaries. Determine the number of ways in which all 7 books can be arranged on the shelf so that the books of the same kind must be kept together.
a. 2120 b. 288 c. 144 d. 5040
Assume 3 novels as object-A and 4 dictionaries as object-B
Now keeping together means...
We can arrange A and B in two ways
A contains 3 novels, we can arrange 3! Ways internally
B contains 4 Dictionaries, we can arrange 4! Ways internally
So total= 2*3! * 4! = 288 ways

160. A container contains a mixture having orange juice, pine apple juice and water in the ratio ½ : 1/3: 1/5. What is the approximate percentage of pine apple in the container?
a. 20% b. 32% c. 30% d. 36%
Ans: lcm of (2,3,5) = 30
Multiply ratios with 30
15: 10: 6

Pipeapple percentage = (6/31) * 100 = 20%

161. Read the information given below and answer the questions that follow.

X%y= (y2-x3)
X&y=(x2-y3)+(x%y)
f(a)=(a2+a3)

what is the value of ((x%y) – (x&y)) (x%y)-1 where x=2, y=1 ?

(a) 11/7 (b) -3/7 (c) 3/7 (d) -11/7
Solution: 3/7

162. The sum of three numbers is 98. If the ratio of first to second is 2:3 and that of the second to the third is 5:8 then the second number is :
Solution: a+b+c=98 à (1)
a/b=2/3 à a=(2/3)b à (2)
b/c=5/8 à c= (8/5)b à (3)
Substitute equations (2) and (3) in Equation(1)
b=30

The basic fuel expenditure of a country is dominated by four major uses - Domestic, Transport, Industry and Electricity. In 2014, the total amount of energy used was equivalent to 600 million tonnes of coal.
Directions: Study the following graph carefully & answer the questions given below it.

163. The central angle for the energy consumed for others is
a. 12 b. 15 c. 18 d. 9
Ans: 100 % it is 360
Then 5% is = (360/100)*5 = 18

164. What is difference between energy used for domestic and others in the country in 2014?
a. 18 million b. 54 million c. 48 million d. 32 million
Ans: 13% - 5% = 8% of 600 Million tonnes
48 million

165. If the energy requirement of transport in 2014 were 220 million tonnes, the approximate amount of additional primary energy required would be
a. 400 million tonnes of coal b. 750 million tonnes of coal
c. 890 million tonnes of coal d. 1000 million tonnes of coal
Ans: let's say total primary energy is x
Then 22% of x = 220
(22/100) * x = 220
X=1000

Ans: 1000-600 = 400

166. If the simple interest on a certain sum of money for 8 months at 8%p.a exceeds the simple interest on the same sum for 12 months at 5% p.a by Rs. 20, then find the value of sum.
Solution:
(P*8*8)/(12*100) - (p*1*5)/100 = 20
P=6000

167. A mixture of 66 litres contains whisky and water in the ratio 4:7 how many litres of whisky and water each must be added to the mixture to make the ratio 2:3?
Solution:
Quantity of whisky in 66 litres mixture is : (4/11)*66 = 24
Similarly quantity of water in 66 litres mixture is : (7/11)*66= 42
Let's say adding x litres of whisky and water added to make mixture ratio as 2:3
Then (24+x)/(42+x)= 2:3
X=12

168. if m= 3-2√2, then the value of √m – (1/√m) is:
Solution:
Let's say √m – (1/√m) = x
Squaring on both sides
m+1/m-2 = x2
if m= 3-2√2, then 1/m = 3+2√2
so m+1/m-2=x2
4=x2
X=2
Ans:2

169. Two cities x and y are 400km apart. Q leaves x 8 hours after P. Both P and Q arrive simultaneously. Find the time the slower person spent on the trip if the speed of one of them was 15kmph higher than that of other.
Solution:

170. Train 'A' leaves a source station for destination station at 11 a.m., running at the speed of 60 kmph. Train B leaves the same source station to the same destination by the same route at 2 p.m. on the same day, running at the speed of 72 kmph. At what time will the two trains meet each other?
Solution:

With 60 kmph in 3 hours train ‘A’ covers 180 kms.
Train B speed is 12kmph more than train ‘A’. Because train B started 3 hours later so it has to cover 180 extra with extra 12kmph speed.
Time taken is = 180/12 = 15 hours
So 15 hours from 2p.m is 5a.m on the next day

171. A motor cycle is moving with the speed of 47.52 kmph and the radius of the wheel of the motorcycle is 21cm. calculate the approximate number of revolutions made by the wheel in one minute.
Solution:
Ans:600

172. A wire of legth 5 cm is subjected to stress that leads to the increase in its length by 25.60%. If the wire is re-shaped into a circle by joining its both ends, then what will be the radius of the circle?
Ans: 1 cm

173. If the length of a rectangle is thrice its width and it is known that length of its diagonal is $15\sqrt{10}$ cm. then determine the area of the rectangle.

Ans: 675

174. A boy buys a pen for Rs. 25 and sells it for Rs. 20. Find his loss percent.
Ans: 20

175. A and B are running at 250 m/minute and 300 m/minute, in the same direction. The distance between the two, after 1 hour, will be:

Ans: 3 km

176. A number when divided by 2, 3, 4, 5 and 6 leaves a remainder 1 in each case but it is exactly divisible by 7.
a. 305 b. 606 c. 601 d. 301
Ans: 301
Solution: find lcm of (2,3,4,5 and 6) = 60
Divide given options with 60 remainder should be 1.
Option c and d satisfy above conditions.
Divide c and d options with 7 . only option(d) is divisible with 7.

177. If (m – m-1)= 1/5, then determine the value of (25m2+ 25m-2).
a. 2 b. 1 c. 49/25 d. 51
Ans: 51.
Solution: (m – m-1)= 1/5
Squaring on both sides
m2+1/m2-2=1/25
m2+1/m2=51/25
Substitute above value
25(m2+m-2)= 51.

178. The ratio between the speeds of two trains is 15:13. If the second train runs 260 km in 2 hours, then the speed of the first train is
a. 75 kmph b. 150 kmph c. 120 kmph d. 90 kmph
Ans: 150 kmph
Solution: s1/s2= 15/13
S2=130 kmph (given)
So s1= 150 kmph

179. Find the value of "x" if 10/3 : x :: 5/2 : 5/4
a. 2/5 b. 5/3 c. 1/5 d. 3/5
Ans: 5/3

180. Fredy drives his car on two journeys the first journey is of 8 miles and takes 35 minutes, while the second journey takes 17.5 miles and takes 55 minutes. Find the average speed of the two journeys combined.
a. 17 miles per hour b. 20 miles per hour c. 15 miles per hour d. 25 miles per hour
Ans: 17 miles per hour
Solution: Average Speed = Total distance/ Total time

= (8+17.5)/ (35+55)/60= 17 miles per hour (convert time in minutes to hour)

181. A square field of area 31684 m2 is to be enclosed with wire placed at height 1 m, 2 m, 3 m, 4 m above the ground. What length of the wire will be required if its length required for each circuit is 5% greater than the perimeter of the field?
a. 6456 m b. 27666 m c. 2990.4 m d. 4666.5 m
Ans: 2990.4 m
Solution: let a is side of square field then a2=31684
a=178
perimeter= 4 * a = 712
5% more than perimeter = 712 + 5% of 712 = 712 + 35.6 = 747.6

Because we enclose four times so 4 * 747.6 = 2990.4

182. The curved surface area of two spheres are in the ratio 1:4. Find ratio of their volumes.
a. 1:4 b. 1:7 c. 1:8 d. 1:6
Ans: 1:8
Curved surface area : 4 * Pi * r2
Volume = (4/3) * Pi* r3
r1/r2= ½
r13=r23 = 1/8

183. 5 boys and 5 girls were made to sit in a row. In how many ways they can be seated so that every boy sits with his respective girl friend?

Ans: 5! 25

184. A vessel is filled to its capacity with pure milk. Ten litres are withdrawn from it and replaced by water. This procedure is repeated again. The vessel now has 32 litres of milk. Find the capacity of the vessel.
a. 55 litres b. 50 litres c. 40 litres d. 45 litres
Ans: 50 litres
Solution:
So x=50
185. A person invested Rs. 2500 on simple interest and got Rs. 200 at the end of the year as interest. What was his rate of interest?
a. 12% p.a b. 10% p.a c. 8% p.a d. 6% p.a
Ans: 8% p.a
Solution: Apply Simple interest formula (P*T*R/100)

186. There are two queues at a super market billing counter. In the first queue, there are m1 customers all with n1 items in their baskets, while in the second queue there are m2 customers all with n2 items in their baskets. It takes "t" seconds to process each item and "p" seconds for each person to pay. A customer wishes to know which queue to join.

Which one of the following options gives the condition for the first queue to be the better queue to join?
a. m1(p+n1t)=m2(p+n2t) b. m2(p+n2t)≤ m1(p+n1t) c. m1(p+n1t) ≤m2(p+n2t) d. m1(p+n1t) < m2(p+n2t)
Ans: d. m1(p+n1t) < m2(p+n2t)

187. Harish creates a model based on Arithmetic Progression which starts at 3 and with a spacing of 8 goes till 467 (i.e. 3,11, _, _, _, 467). Ravi wants to create another model through a subset of this series such that the total of no two elements of his series is 479. The maximum possible number of elements which Ravi's series has would be:

a. 24 b. 32 c. 30 d. 29

189. The diameter of the wheel of a car is 14 m. It makes 5 revolutions per 11 seconds. What is the speed of the car?
a. 48 kmph b. 72 kmph c. 64 kmph d. 56 kmph
Ans: 72 kmph
Solution: surface area of a circle = 2 * Pi * r = 44 m
5 revolutions in 11 seconds
1 second = 20 m
20 m/second = 20 * (18/5) = 72 kmph

190. If x,y,z are positive variables and the value of (x+y+z)=18, then what is the maximum value of xyz?
a. 110 b. 100 c. 216 d. 252

191. Read the information given below and answer the question that follows:
1. A+B means A is father of B;
2. A-B means A is the sister of B;
3. A/B means A is the mother of B;
4. A*B means A is the brother of B
Which of the following expressions whows that M is the paternal uncle of N?
a. N*P b. N-P+M c. M-P+Q*N d. M*P+Q-N

192. if m/(m2-2m+1)=1/5, then determine the value of (m3 + m-3)
a. 323 b. 321 c. 320 d. 322
Solution: (m2-2m+1)/m=5
Apply denominator to individual terms
m-2+1/m=5
m+1/m=7
so (m+1/m)3 = m3+3m+3/m+1/m3
substitute required values in above equation.
Ans: 322

193. The base of a triangular field is 880 m and its height is 550 m. Calculate the charges for supplying water to the field at the rate of Rs. 24.25 per sq.hectometer.
a. Rs 44 b. Rs 24.22 c. Rs 58.68 d. 654.4
Ans: 58.68
Solution: area of a triangle= (1/2) * base * Height
= 242000 sq.m = 2.42 sq.hectometer
Charges= 2.42 * 24.25 = 58.68

194. How many numbers greater than a million can be formed from the digits 4,5,6,0,7,6,5?
a. 540 b. 4320 c. 2160 d. 1080

195. Which of the following would not be a consideration while designing model for emergency fire exit?
a. Number of evacuation doors. B. Number of people to be evacuated
c. Comfort of exit d. Number of safety personals

196. Ashif sold an article for Rs 315 at a profit of 5%. What would have been the loss incurred by him it it was sold for Rs. 275?
a. 7.625% b. 4.5 % c. 5.625% d. 6.25% e. 8.33%

197. a hemisphere, a cylinder and a cone of same height have equal base radii. Determine the ratio of their volumes (in the same order)
a. 5:2:6 b. 3:4:6 c. 1:2:3 d. 2:3:1

198. The internal and external radii of a hollow cylinder are 4 cm and 6 cm respectively. What is the ratio of its internal surface area to its external surface area?
a. 4:9 b. 2:3 c. 3:4 d. 9:4

199. If A+B+C = 450 and A:B:C=3:5:7, then the value of "A" is:
a. 60 b. 90 c. 120 d. 140

200. Two numbers are in the ratio of 4:9. If the first number is increased by 50% and second number is doubled then the ratio becomes 1:3 then original numbers are:
a. 36,81 b. 27,12 c. 18,36 d. 80,90

ans: 36,81

01. In how many ways can 34 people be divided into 17 couples?
a. (34!)/{(17!)17 (2!)} b. (34!)/{(2!)17 (17!)} c. (34!)/ {(2!)(17!)} d. Data Inadequate
Ans: Short cut how many ways n people be divided into n/2 couples
(n!)/{(2!)n/2 (n/2)!} so ans is b. (34!)/{(2!)17 (17!)}

202. The electricity bill of JMD is partly fixed and partly varies as the number of units of electricity consumed. When is a certain month 650 units consumed the bill was Rs. 2,130. In yet another month 720 units were consumed and the bill was Rs. 2,340. What would be the bill for the month 940 units consumed?
a. 3,575 b. 3,000 c. 4,350 d. 2,990
Ans: 3,000
Solution: let's say fixed cost is k and unit cost is x
Then k+650 * x=2130
K+720 * x= 2340
From above two equations k=180 and x=3
Now 180+940*3= 3000

203. A wooden board is 7ft 9 inches long. It is divided into 3 equal parts. What is the length of each part?
a. 2 ft 7 inches b. 3 ft c. 2 ft 4 inches d. 2ft 6 inches

Ans: 2 ft 7 inches
1 ft= 12 inches
So 7 ft 9 inches = 93 inches
Divide 93 inches into 3 equal parts. Then each part is 31 inches.
31 inches = 2 ft 7 inches

204. Determine the metal required to make a 21 m long pipe if its inner and outer diameter are 12 m and 10 m respectively.
a. 2904 m3 b. 2534 m3 c. 2843 m3 d. 2647 m3
volume of a hollow cylinder=pi*h*(R^2-r^2)
22/7*21m*(144-100)m^2
=66*44m3
=2904m3

205. Two trains of length 180 m and 220 m are running in opposite directions, the first one at the rate of 50 kmph and while second one at . Calculate the time they will require to pass each other.
a. 20 seconds b. 16 seconds c. 18 seconds d. 17 seconds

206. 30 men can do a work in 30 days and 40 women can do the same work in 40 days. If they started working together, how many more men required completing the work in 10 days?
a. 42 b. 28 c. 25 d. 38
Ans: 38
Total work has to be finished in 10 days. That means 1 day work becomes 1/10
Let's say x number of men added to complete the work in 10 days.
Then
I day's work of (30 men + 40 women + x men) = 1/10 ---- (1)
If 30 men can do a work in 30 days
Then 30 men 1 day's work = 1/30
Then 1 man 1 day's work = 1/900
40 women can do a work in 40 days
Then 40 women 1 day's work = 1/40
Substitute above values in equation (1)
(1/30 + 1/40 + x (1/900))=1/10
Simplify above equation and find x value.
X=37.5 but x cannot be decimal value because x represents number of men. So x=38

207. Read the information given below and answer the question that follows:
I. (x & y) = (x2 – y2)
II. (x ? y) = (x-y)/2
III. (x $ y)= (x + y)/2

If (x @ y) is defined as (x3-y3) then for integers x,y>2 and x > y which of the following relationships will always be true?
a. (x & y) < (x @ y) b. (x$ y) > (x?y) c. (x $ y) ≥ (x ?y) d. Both (x$ y) > (x?y) and (x & y) < (x @ y)

208. 3 designers x,y and z can stitch 324 dresses in 6 weeks working simultaneously. During one shift, z stitches as many dresses more than y as y stitches more than x. Z's work in 10 weeks in equivalent to x's work in 14 weeks. How many dresses does x stitch per shift.
a. 21 b 15 c. 27 d. 18

209. A person travels for 3 hours at the speed of 40 kmph and for 4.5 hours at the speed of 60 kmp. At the end of it, he finds that he has covered (3/5)th of the total distance. At what average speed should he travel to cover the remaining distance in 4 hours?
a. 70 kmph b. 65 kmph c. 75 kmph d. 60 kmph
Ans: 65 kmph
Distance covered in 3 hours = 3 * 40 = 120 km
Distance covered in 4.5 hours = 60 * 4.5 = 270 km
Let's say total distance is x kms
Then (3/5) * x= 120+270
X= 650 kms
Remaining distance = 650 – (120+270) = 260 km
Speed = distance / time = 260 / 4 = 65 kmph

210. If the simple interest is 7% annual and compound interest is 6% annual, find the difference between the interests after 4 years on a sum of Rs 2000.
a. 33.05 b. 32.5 c. 37.5 d. 35.05
Ans: 35.05
Simple interest after 4 years = (2000 * 7 * 4)/100= 560
Compound interest after 4 years = 2000*(1+ 6/100)4 – 2000 = 525.95
Difference = 560 – 525.95 = 35.05

211. if (p+q)=3 then what is the value of (p3 + q3), when it is given that p=1/q?
a. 123 b. 143 c. 111 d. 132
Ans: 18
Click here for detailed explanation
212. let M = (1,2,3,4, ...) be the set of natural numbers and Q(n) be a mathematical statement involving the natural numbers "n" belonging to M such that
I. Q(1) is true i.e., Q(n) is true for n=1
II. Q(n+1) is true whenever Q(n) is true
Which of the following statements is true with regard to the given information?
a. Q(n) is true for all natural numbers n b. Cannot be detrmined from the data given
c. Both the mentioned statements are true. D. Q(n) is true implies that Q(n+1) is true.

213. 132 ml of a drink contains vodka and water in 27:6. How much more water is to be added to get a new mixture
a. 24 ml b. 54 ml c. 12 ml d. 36 ml

214. if (x + 1/x)= 3 then find the value of (x8+1/x8)
a. 3037 b. 2207 c. 1000 d. 800
Click here for detailed explanation

215. The sum of ages of two people is 40 years. After 5 years the ratio of their ages will be 3:7 what is the ratio of their present ages?
a. 1:3 b. 1:2 c. 2:1 d. 3:1
Ans: a+b=40 -- (1)
(a+5)/(b+5) = 3/7 -- (2)

Solve above two equations then a=10 and b=30
So ratio is 1:3
216. Two numbers are in the ratio 11:6 if the first number is increased by 200 and second by 50% then the new ratio becomes 5:3 determine the original numbers
a. 40 and 25 b. 24 and 15 c. 550 and 300 d. 32 and 20
Ans: original ratio = 11k/6k
(11k+200) / (6k+3k) = 5/3
Then k=50

So original numbers are 550 and 300
217. A photograph is to be fitted in a photo frame of sides 18 cm by 15 cm such that there is a margin of 1.5 cm left. What should be the area of the photograph?
a. 140 cm2 b. 180 cm2 c. None of these d. 270 cm2
Ans: 180 (similar to q.no 78)
1.5 cm margin on bothsides....then 1.5+1.5=3cm
area of photograph(rectangle) =(18-3)*(15-3)
=180cm2
218. if m+ (m-3)-1 = 6 then determine the value of (m-3)2 + (m-3)-2
a. 3 b -1 c. 1 d. 0

219. a peacock is sitting on a 19 m long pole, a snake is approaching the hole which is at bottom of the pole, the snake is 27 m away from the hole, if their speeds are same, find the distance from the hole at which the peacock pounces over the snake.
a. 3.4 m b. 6.8 m c. 5.9 m d. 7.3 m
They both have same speed hence if snake moves 'x' then peacock also moves 'x' but diagonally down from the pole...
hence path of peacock , ground, and the pole make a triangle..... with diagonal (Hypotenuse) = x
snake moves 'x' hence distance left =(27 - x) which is the base of triangle
and height of the pole is the height of triangle =19.
now, apply pythagoras' theorem----- x^2= (27-x)^2 + 19^2
solve the equation ..... x= 20.18 m
And the distance from the hole at which the peacock pounces over the snake = 27 - 20.18 = 6.8
Answer= 6.8

Ques 221 : Choose the correct answer.

Some persons can do a piece of work in 12 days. Two times the number of such persons will do half of that work in:

Option 1 : 6 days

Option 2 : 4 days

Option 3 : 3 days

Option 4 : 12 days

Ques 222 : Choose the correct answer.

Ronald and Elan are working on an assignment. Ronald takes 6 hours to type 32 pages on a computer, while Elan takes 5 hours to type 40 pages. How much time will they take, working together on two different computers
to type an assignment of 110 pages ?
Option 1 : 7 hours 30 minutes
Option 2 : 8 hours
Option 3 : 8 hours 15 minutes
Option 4 : 8 hours 25 minutes

Ques 223 : Choose the correct answer.
A and B can do a work in 12 days, B and C in 15 days, C and A in 20 days. If A, B and C work together, they will complete the work in:
Option 1 : 5 days
Option 2 : 47/6 days
Option 3 : 10 days
Option 4 : 47/3 days

Ques 224 : Choose the correct answer.
A and B can do a job together in 7 days. A is 7/4 times as efficient as B. The same job can be done by A alone in:
Option 1 : 28/3 days
Option 2 : 11 days
Option 3 : 49/4 days
Option 4 : 49/3 days

Ques 225 : Choose the correct answer.
A and B can complete a work in 15 days and 10 days respectively. They started doing the work together but after 2 days B had to leave and A alone completed the remaining work. The whole work was completed in:
Option 1 : 8 days
Option 2 : 10 days
Option 3 : 12 days
Option 4 : 15 days

Ques 226 : Choose the correct answer.
A, B and C together can complete a piece of work in 10 days. All the three started working at it together and after 4 days A left. Then B and C together completed the work in 10 more days. A alone could complete the work in:

Option 1 : 15 days
Option 2 : 16 days
Option 3 : 25 days
Option 4 : 50 days

Ques 227 : Choose the correct answer.
One pipe can fill a tank three times as fast as another pipe. If together the two pipes can fill the tank in 36 minutes, then the slower pipe alone will be able to fill the tank in:
Option 1 : 81 min
Option 2 : 108 min
Option 3 : 144 min
Option 4 : 192 min

Ques 228 : Choose the correct answer.
A large tanker can be filled by two pipes A and B in 60 minutes and 40 minutes respectively. How many minutes will it take to fill the tanker from empty state if B is used for half the time and A and B fill it together for the other half ?
Option 1 : 15 min
Option 2 : 20 min
Option 3 : 27.5 min
Option 4 : 30 min

Ques 229 : Choose the correct answer.
Three taps A, B and C can fill a tank in 12, 15 and 20 hours respectively. If A is open all the time and B and C are open for one hour each alternately, the tank will be full in:
Option 1 : 6 hrs.
Option 2 : 20/3 hrs
Option 3 : 7 hrs
Option 4 : 15/2 hrs

Ques 230 : Choose the correct answer.
Two pipes can fill a tank in 20 and 24 minutes respectively and a waste pipe can empty 3 gallons per minute. All the three pipes working together can fill the tank in 15 minutes. The capacity of the tank is:
Option 1 : 60 gallons
Option 2 : 100 gallons
Option 3 : 120 gallons
Option 4 : 180 gallons

Ques 231 : Choose the correct answer.

Ram and Shyam together do a work in 8 days. Both of them began to work. After 3 days Ram fell ill. Shyam completed the remaining work in 15 days. In how many days can Ram complete the whole work?

Option 1 : 12

Option 2 : 17

Option 3 : 16

Option 4 : 15

Ques 232 : Choose the correct answer.

Two workers A and B were employed for a work. A takes 8 hour more than the time taken by A and B together. If B takes 4.5 hours more than the time taken by A and B together, how long would A and B take together to complete the work?

Option 1 : 7 hours

Option 2 : 6 hours

Option 3 : 5 hours

Option 4 : 4 hours

Ques 233 : Choose the correct answer.

If 5 persons can do 5 times of a work in 5 days, then 10 persons can do 10 times of that work in:

Option 1 : 10 days

Option 2 : 8 days

Option 3 : 5 days

Option 4 : 2 days

Ques 234 : Choose the correct answer.

Two taps can fill a cistern in 6 min. and 7 min. respectively. If these taps are opened alternatively for a minute, in what time will the cistern be filled?

Option 1 : 5.67 min

Option 2 : 6.25 min

Option 3 : 5 min

Option 4 : 45/7 min

Ques 235 : Choose the correct answer.

Two taps A and B can fill a cistern in 28 min. and 42 min. respectively. Third tap C can empty it in 42 min. If all the three taps are opened, the time taken to fill the cistern is:

Option 1 : 30 min

Option 2 : 35 min

Option 3 : 28 min

Option 4 : 42 min

Ques 236 : Choose the correct answer.
49 pumps can empty a reservoir in 6½ days, working 8 hours a day. If 196 pumps are used for 5 hours a day, then the same work will be completed in:
Option 1 : 2.6 days
Option 2 : 3 days
Option 3 : 2.5 days
Option 4 : 2 days

Ques 237 : Choose the correct answer.
16 men complete one-fourth of a piece of work in 12 days. What is the additional number of men required to complete the work in 12 more days ?
Option 1 : 48
Option 2 : 36
Option 3 : 30
Option 4 : 16

Ques 238 : Choose the correct answer.
A takes thrice as long to do a piece of work, as B takes. A and B together can do a piece of work in 7.5 days. A alone can do in:
Option 1 : 30 days
Option 2 : 40 days
Option 3 : 50 days
Option 4 : 60 days
Option 5 : None of these

Ques 239 : Choose the correct answer.
A cistern can be filled by two pipes A and B in 10 and 15 hours respectively and is then emptied by a tap in 8 hours. If all the taps are opened, the cistern will be fill in:
Option 1 : 21 hours
Option 2 : 22 hours
Option 3 : 23 hours
Option 4 : 24 hours
Option 5 : None of these

Ques 240 : Choose the correct answer.

A locomotive engine, without any wagons attached to it, can go at a speed of 40 km/hr. Its speed is diminished by a quantity that varies proportionally as the square root of the number of wagons attached. With 16 wagons, its speed is 28 km/hr. The

Option 1 : 99

Option 2 : 100

Option 3 : 101

Option 4 : 120

Ques 241 : Choose the correct answer.

If 33 untrained labourers can do a work in 15 days of 12 hr. each, how many trained labourers can do 50% more work in 11 days of 9 hr each ? (It may be assumed that it takes 2 trained labourers to do the work of 5 untrained labourers)

Option 1 : 42

Option 2 : 36

Option 3 : 90

Option 4 : 100

Ques 242 : Choose the correct answer.

Which of the following fractions is less than 7/8 and greater than 1/3 ?

Option 1 : 1/4

Option 2 : 23/24

Option 3 : 11/12

Option 4 : 11/24

Ques 243 : Choose the correct answer.

892.7 – 573.07 – 95.007 = ?

Option 1 : 224.623

Option 2 : 224.777

Option 3 : 233.523

Option 4 : 414.637

Ques 244 : Choose the correct answer.

Which is the closest approximation to the product 0.3333 x 0.25 x 0.499 x 0.125 x 24 ?

Option 1 : 1/8

Option 2 : 3/4

Option 3 : 3/8

Option 4 : 2/5

Ques 245 : Choose the correct answer.

Find the value of X :

0.009/X = 0.01

Option 1 : 0.0009

Option 2 : 0.09

Option 3 : 0.9

Option 4 : 9

Ques 246 : Choose the correct answer.

The least among the following is:

Option 1 : 0.2

Option 2 : 1/0.2

Option 3 : 0.22222222

Option 4 : (0.2)2

Ques 247 : Choose the correct answer.

In the following expression, there are two missing digits: * and #. Find the value of *.

1*5#4 / 148 = 78

Option 1 : 1

Option 2 : 4

Option 3 : 6

Option 4 : 8

Option 5 : None of these

Ques 248 : Choose the correct answer.

What is the value of (-5)(4)(2)(-1/2)(3/4) ?

Option 1 : -30

Option 2 : -15

Option 3 : 15

Option 4 : 30

Ques 249 : Choose the correct answer.

If x * y = x2 + y2 – xy, then the value of 9 * 11 is:

Option 1 : 93

Option 2 : 103

Option 3 : 113

Option 4 : 121

Ques 250 : Choose the correct answer.

If a = 0.1039, then the value of (4a2 – 4a + 1)1/2 + 3a is:

Option 1 : 0.1039

Option 2 : 0.2078

Option 3 : 1.1039

Option 4 : 2.1039

Ques 251 : Choose the correct answer.

If a, b, c, d, e are five consecutive odd numbers, their average is:

Option 1 : 5 (a + 4)

Option 2 : (abcde/5)

Option 3 : 5 (a + b + c + d + e)

Option 4 : None of these

Ques 252 : Choose the correct answer.

(x % of 932) + 30 = 309.6

Find x.

Option 1 : 25

Option 2 : 30

Option 3 : 35

Option 4 : 40

Ques 253 : Choose the correct answer.

Which of the following multipliers will cause a number to be increased by 29.7% ?

Option 1 : 1.297

Option 2 : 12.97

Option 3 : 129.7

Option 4 : 1297

Ques 254 : Choose the correct answer.

If 2A = 3B and 4B = 5C, then A: C is:

Option 1 : 4 : 3

Option 2 : 8 : 15

Option 3 : 15 : 8

Option 4 : 3 : 4

Ques 255 : Choose the correct answer.

0.4777 . . . is the recurring decimal for the fraction:
Option 1 : 4777/100000
Option 2 : 477/100
Option 3 : 437/1000
Option 4 : 43/90

Ques 256 : Choose the correct answer.
0.8888 ÷ 0.011 is equal to:
Option 1 : 8.08
Option 2 : 80.8
Option 3 : 0.808
Option 4 : None of these

Ques 257 : Choose the correct answer.
The ascending order of rational numbers -7/10, 5/-8, 2/-3 is:
Option 1 : -7/10, 2/-3, 5/-8
Option 2 : -7/10, 5/-8, 2/-3
Option 3 : 5/-8, -7/10, 2/-3
Option 4 : 2/-3, 5/-8, -7/10

Ques 258 : Choose the correct answer.
If A is real and 1 + A + A2 + A3 = 40, then A is equal to:
Option 1 : -3
Option 2 : -1
Option 3 : 1
Option 4 : 3

Ques 259 : Choose the correct answer.
(1 + 3 + 5 + … + 3983) / 1992 = ?
Option 1 : 1988
Option 2 : 1992
Option 3 : 1990
Option 4 : None of these

Ques 260 : Choose the correct answer.
Which one of the following should be added to 25p2 + 16q2, so that the resulting sum becomes a perfect square?
Option 1 : 20pq

Option 2 : 30pq

Option 3 : 40pq

Option 4 : 50p2q2

Ques 261 : Choose the correct answer.

(1.0816) 1/2= ?

Option 1 : 0.14

Option 2 : 1.4

Option 3 : 1.004

Option 4 : 1.04

Ques 262 : Choose the correct answer.

If the digit in the units place of a square natural number is 6, then the digit in the tens place will be:

Option 1 : 1

Option 2 : 3

Option 3 : Even

Option 4 : Odd

Ques 263 : Choose the correct answer.

(a+b)3-(a-b)3 can be factorized as:

Option 1 : 2b(3a2+b2)

Option 2 : 2a(3a2+b2)

Option 3 : 2b(3b2+a2)

Option 4 : 2a(a2+3b2)

Ques 264 : Choose the correct answer.

If 9x2+3px+6q when divide by 3x+1 leaves a remainder -3/4 and qx2+4px+7 is exactly divisible by x+1, then the values of p and q respectively will be:

Option 1 : 0, 7/4

Option 2 : -7/4, 0

Option 3 : Same

Option 4 : 7/4, 0

Ques 265 : Choose the correct answer.

The equations 2x+3y-7=0 and 10x+15y-35=0 are:

Option 1 : Consistent and have unique solution

Option 2 : Consistent and have infinitely many solutions

Option 3 : inconsistent

Option 4 : none of these

Ques 266 : Choose the correct answer.

The solution of the simultaneous equations (1/2)x + (1/3)y = 2 and x+y=1 is:

Option 1 : x = 0, y = 1

Option 2 : x = 1, y = 0

Option 3 : x = 2/3, y = 3/2

Option 4 : x = 10, y = -9

Ques 267 : Choose the correct answer.

If the equation x2-2(k+1)x+(9/2)k=0 has two identical roots then the values of k are:

Option 1 : k=1, 2

Option 2 : k=2 or 1/2

Option 3 : k=3, 1/2

Option 4 : none of these

Ques 268 : Choose the correct answer.

The number which should be subtracted from 5a2-3ab+7b2 to make it equal to a2+ab+b2, is:

Option 1 : 4a2-4ab+6b2

Option 2 : 4a2-4ab+5b2

Option 3 : 4a2+4ab+6b2

Option 4 : 4a2-3ab+6b2

Option 5 : None of these

Ques 269 : Choose the correct answer.

If x = (1/2) (2p+2q-r), y = (1/3) (-p-2q+3r) and z=(1/5) (3p-4r+5q), then the value of 2x-3y-5z is:

Option 1 : 0

Option 2 : -q

Option 3 : 2

Option 4 : None of these

Ques 270 : Choose the correct answer.

The roots of the quadratic equation 6x2-5x+1=0 are:

Option 1 : 2,3

Option 2 : 1/2,1/3

Option 3 : 3,4

Option 4 : 1/3,1/4

Option 5 : None of these

‘Ques 271 : Choose the correct answer.
If a = 16, b=25, the value of 1/(a-1/2 – b-1/2) is:
Option 1 : 10
Option 2 : 15
Option 3 : 20
Option 4 : 25
Option 5 : 30

Ques 272 : Choose the correct answer.
3a2 (ab+bc+ca) =
Option 1 : 3a2+3a2bc+3a3c
Option 2 : 3a3b+3a2bc+3c
Option 3 : 3a3b+3a2bc+3a3c
Option 4 : a3b+abc+a2c
Option 5 : None of these

Ques 273 : Choose the correct answer.
x4y-xy4 =
Option 1 : xy(x-y)(x2 + xy + y2)
Option 2 : xy(x+y)(x2-xy+y4)
Option 3 : x(xy-1)(x2-xy+y)
Option 4 : (x3+y2)xy
Option 5 : None of these

Ques 274 : Choose the correct answer.
Factors of 6a2-25a+4 are:
Option 1 : (a+4) (a-6)
Option 2 : (a-4) (6a+1)
Option 3 : (a-4)(6a-1)
Option 4 : (a-6) (a-4)
Option 5 : None of these

Ques 275 : Choose the correct answer.
The correct relationship after eliminating x, y and z from x+y = a, y+z=b and z+x = c and x+y+z = m, is:
Option 1 : m=x+y+z
Option 2 : 2m=a+b+c
Option 3 : m=x-y-z
Option 4 : 2m=x-y-z
Option 5 : None of these

Ques 276 : Choose the correct answer.
If r = at2 and s = 2at, the relation among s, r and a is:
Option 1 : s2=4ar
Option 2 : s=ar
Option 3 : s=2ar
Option 4 : s2=ar

Option 5 : None of these

Ques 277 : Choose the correct answer.
If a+b=6, ab=5, the value of a-b is:
Option 1 : 4
Option 2 : 5
Option 3 : 6
Option 4 : 7
Option 5 : 9

Ques 278 : Choose the correct answer.
|X – 5| + 4 > 0 and |X2| < 4. Then x can be:
Option 1 : 4
Option 2 : 2
Option 3 : 0.5
Option 4 : All of these

Ques 279 : Choose the correct answer.
If f(x) = sum of all the digits of x, where x is a natural number, then what is the value of f(101)+f(102)+f(103)+ .. +f(200)?
Option 1 : 1000
Option 2 : 784
Option 3 : 999
Option 4 : 1001

Ques 280 : Choose the correct answer.
Pawan is a very confused person. Once he wrote 1+2+3+4+5+6+7+8+9+10 = 100. In how many places you need to change '+' with ' * ' to make the equality hold good ?
Option 1 : 2
Option 2 : 4
Option 3 : 3
Option 4 : None of these

Ques 281 : Choose the correct answer.
What is the highest power of 82 contained in 83!-82! ?
Option 1 : 3
Option 2 : 2
Option 3 : 164
Option 4 : None of these

Ques 282 : Choose the correct answer.
If x = 0.75, then what is the value of the expression (1+x+x2) + x3/(1-x) ?
Option 1 : 0.25
Option 2 : 4
Option 3 : 1.75
Option 4 : 1

Ques 283 : Choose the correct answer.
If a lies between 2 and 3, both included, and b lies between 4 and 6, both included, then what is the ratio of minimum and maximum limits of a2-b2?
Option 1 : -4
Option 2 : 4
Option 3 : 32/7
Option 4 : – 28/6

Ques 284 : Choose the correct answer.
If a, b, c are roots of the equation 1x3-4x2+6.5x + 3.5 = 0, then what is the value of a2 + b2 + c2?
Option 1 : 1
Option 2 : 64
Option 3 : 169
Option 4 : 3

Ques 285 : Choose the correct answer.
If |x| + |y| = 7, then what is the sum of minimum and maximum values of x + y?
Option 1 : 3/2
Option 2 : -7
Option 3 : 7
Option 4 : 0

Ques 286 : Choose the correct answer.
832.58-242.31 =779.84- ?
Option 1 : 179.57
Option 2 : 199.57
Option 3 : 295.05
Option 4 : None of these

Ques 287 : Choose the correct answer.
Which is the closest approximation to the product 0.3333 * 0.25 * 0.499 * 0.125 * 24 ?
Option 1 : 1/8
Option 2 : 3/4
Option 3 : 3/8
Option 4 : 2/5

Ques 288 : Choose the correct answer.
The simplification of (0.2 * 0.2 + 0.02 * 0.02 – 0.4 * 0.02) / 0.36
Option 1 : 0.009
Option 2 : 0.09
Option 3 : 0.9
Option 4 : 9

Ques 289 : Choose the correct answer.
If 13 + 23+ 33+ …….+ 93 = 2025 ,then the value of (0.11)3 + (0.22)3 + ….+ (0.99)3 is close to:

Option 1 : 0.2695
Option 2 : 0.3695
Option 3 : 2.695
Option 4 : 3.695

Ques 290 : Choose the correct answer.
In a purse there are 30 coins, twenty one-rupee and remaining 50-paise coins. Eleven coins are picked simultaneously at random and are placed in a box. If a coin is now picked from the box, find the probability of it being a rupee coin?
Option 1 : 4/7
Option 2 : 1/2
Option 3 : 2/3
Option 4 : 5/6

Ques 291 : Choose the correct answer.
A, B and C are three students who attend the same tutorial classes. If the probability that on a particular day exactly one out of A and B attends the class is 7/10; exactly one out of B and C attends is 4/10; exactly one out of C and A attends is 7/10. I
Option 1 : 46/100
Option 2 : 63/100
Option 3 : 74/100
Option 4 : 99/100

Ques 292 : Choose the correct answer.
A box contains 10 balls numbered 1 through 10. Anuj, Anisha and Amit pick a ball each, one after the other, each time replacing the ball. What is the probability that Anuj picks a ball numbered less than that picked by Anisha, who in turn picks a lesser n
Option 1 : 3/25
Option 2 : 1/6
Option 3 : 4/25
Option 4 : 81/400

Ques 293 : Choose the correct answer.
A biased die has a probability of 1/4 of showing a 5, while the probability of any of 1, 2, 3, 4, or 6 turning up is the same . If three such dice are rolled, what is the probability of getting a sum of atleast 14 without getting a 6 on any die ?
Option 1 : 5/24
Option 2 : 9/160
Option 3 : 1/30
Option 4 : 7/160

Ques 294 : Choose the correct answer.
A, B, C, D and E play the following game. Each person picks one card from cards numbered 1 through 10. The person who picks the greatest numbered card loses and is out of the game. Now the remaining four return their cards to the pack and draw again, and
Option 1 : 3/14

Option 2 : 4/17
Option 3 : 1/5
Option 4 : 5/24

Ques 295 : Choose the correct answer.
Which among the following is greatest: 51/2, 111/3, 1231/6 ?
Option 1 : 51/2
Option 2 : 111/3
Option 3 : 1231/6
Option 4 : All are equal

Ques 296 : Choose the correct answer.
What are the unit's digits of 369, 6864, 4725 respectively ?
Option 1 : 9,6 and 6
Option 2 : 6, 6 and 6
Option 3 : 3,6 and 4
Option 4 : None of these

Ques 297 : Choose the correct answer.
A = 11 * 22 * 33 * 44 * 55 * ……..1010. How many zeroes will be there at the end of A ?
Option 1 : 6
Option 2 : 15
Option 3 : 10
Option 4 : None of these

Ques 298 : Choose the correct answer.
If x = 3 + 31/2, then what is the value of x2 + 9/x2 ?
Option 1 : 15 + 3 * 31/2
Option 2 : 18 + 3 * 31/2
Option 3 : 27 + 3 * 31/2
Option 4 : None of these

Ques 299 : Choose the correct answer.
If x4 + 1/x4 = 47, then find the value of x3 + 1/x3
Option 1 : 18
Option 2 : 27
Option 3 : 9
Option 4 : 12

Ques 300 : Choose the correct answer.
The product of two numbers is 2028 and their H.C.F. is 13. The number of such pairs is:
Option 1 : 1
Option 2 : 2
Option 3 : 3
Option 4 : 4

Set 1.a

Probability

Q1. John has 8 gold coins in his one pocket (say A) and 5 silver and 3 gold coins in the other pocket (say B). He randomly chooses a pocket and picks a coin from it. If the coin he chose is gold, then what is the probability that he chose pocket A?

Ops: A. 8/11

B. 8/13

C. 1/2

D. 2/3

Solution:

P(pocket A)=1/2

P(Gold |pocket A)=1/8

P(gold | pocket B)=3/8

Applying Bayes' theorem

P(gold | A pocket) = (P(A pocket | gold) * P(A Pocket)) / P(Gold coin)

= (1/2 * 1/8) / ((1/2 * 1/8) +(1/2 * 3/8))

=1/4

Correct Answer: Option c

Q2. If a coin is tossed thrice, what is the probability that tails turns out at least twice, consider the fact that the coin is biased (i.e., loaded) so that the probability that a head turns out in a flip is 0.6?

Ops: A. 0.648

B. 0.784

C. 0.352

D. 0.432

Solution:

Let P(H)=P(H)=p be the probability of one head. In many scenarios, this probability is assumed to be p=1/2 for an unbiased coin. In this instance, P(H)=.60 , P (T) =.4

You are interested in the event that out of three coin tosses, at least 2 of them are tails, or equivalently, at most one of them is heads. So you are interested in finding the likelihood of zero head, or one head.

The probability of zero head would be the case where you only received tails. Since each coin toss is independent, you can multiply these three tosses together: P(T)P(T)P(T)= p^3 or in your case, $(.4)^3$=.064

Now we must consider the case where one of your coin flips is a head. Since you have three flips, you have three independent opportunities for head. The likelihood of two tail and one head is $3(p^2)(1-p)$.

The reason for the 3 coefficient is the fact that there are three possible events which include two tail and one head: TTH,THT,HTT. In your case (where the coin is 3 times more likely to have heads): 3 * .4 2 *.6 =.288

Adding those events together you get $p^3+3(p^2)(1-p)$= .064 +.288= .352

Correct Answer: Option C

Q3. If two unbiased dice are rolled together, then what is the probability of getting no difference of points?

Ops: A. 1/2

B. 1/3

C. 1/5

D. 1/6

Solution:

No difference of points means getting zero

Favorable= (1,1)(2,2)(3,3)(4,4)(5,5)(6,6)

Total= 36

= 6/36

= 1/6

Correct answer option d

Q4. One card is drawn from a pack of 52 cards, each of the 52 being equally likely to be drawn. Find the probability that the card drawn is a jack.

Ops: A. 4/13

B. 1/13

C. 2/13

D. 3/13

Solution:

Favorable = 4

Total= 52

=> 4/52= 1/13

Correct answer option b

Q5. Two unbiased coins are tossed. The probability of obtaining at least one head is:

Ops: A. 1/4

B. 2/4

C. 3/4

D. 0

Solution:

Favorable outcomes = HH, HT,TH

= 3/4

Correct answer option c

Time and Work

Q1. Sam is twice as efficient plumber as Joe and together they finish a fitting work in 8 days.

In how many days can it be done by Sam alone?

Ops: A. 14 days

B. 12 days

C. 18 days

D. 24 days

Solution:

Work done by Sam in 1 day : Work done by Joe in 1 day = 2 : 1

Total work done in 1 day = 1/8

Therefore, work done by Sam in 1 day = 1/8 × 2/3 =1/12

Correct Answer: Option B

Q2. If 10 men can paint a wall 40 m long and 6 m high in 24 days, then how many men are required to paint another wall, which is 15 m long and 12 m high, in 15 days?

Ops: A. 12

B. 26

C. 52

D. 15

Solution:

More height, more men (direct)

Less days, mere men (indirect)

As we know the formula (M1 X D1)/H1 = (M2 X D20/H2

(10 X 24)/40 = (M2 X 15)/30

= 12

Correct Answer: Option A

Q3. 2 men and 5 women can complete half of the work assigned in 5 days and 3 men and 4 women can do one-third of it in 3 days. How many days will 9 men take to do the same job?

Ops: A. 3 days

B. 9 days

C. 7 days

D. 5 days

Solution:

2m+5w)* 10= (3m+4w)*9

20m+50w= 27m+36w

14w= 7m

M = 2w

Now

(2m+5w) *10= 9m* x

9w*10= 18w*x

x= 5

Correct answer option d

Q4. 6 boys can complete a work in 17 days. 1 boy can complete it in:

Ops: A. 102 days

B. 119 days

C. 85 days

D. 136 days

Solution:

6 boys can complete the work = 17 days

⇨ 1 boy = 17*6

= 102day

Correct answer option a

Q5. Twenty women can do a work in sixteen days. Sixteen men can complete the same work in fifteen days. What is the ratio between the capacity of a man and a woman?

Ops: A. 3 : 4

B. None of the mentioned options

C. 5 : 3

D. 4 : 3

Solution:

20w*16= 16m*15

4w:3m

Correct answer option d

Q6. 12 men or 15 women can reap a field in 14 days. Find the number of days that 7 men and 5 women will take to reap it.

Ops: A. 16.32 days

B. 14.22 days

C. 17.01 days

D. 15.27 days

Solution:

Since 12 men can reap the field in 14 days . One man can reap (1/12*14) = (1/168)th field a day.

Since 15 women can reap the field in 14 days . One women can reap (1/15*14) = (1/210)th field a day.

Now we have 7 men and 5 women working. So, the total number of days taken would be the reciprocal of:

7*(1/168) + 5*(1/210) = 11 / 168 (taking reciprocal) = 168/11 = 15.27 days

Correct Option is D

Q7. Agyan is twice as good a workman as Adroit. If they work together, task is accomplished in 14 days. If Agyan is not well and Adroit does it alone, how much time would he require?

Ops: A. 41 days

B. 43 days

C. 42 days

D. 40 days

Solution:

(Agyan's 1 day's work) : (Adroit's 1 day's work) = 2 : 1.

(Agyan's + Adroit's) 1 day work = 1/14

Divide 1/14 in the ratio of 2:1

Adroit a day's work = (1/14)*(1/3) = 1 / 42.

42 days.

Correct Option is C

Q8. A, B and C contract a work for Rs. 550. Together, A and B are supposed to do 7/11 of the work. How much does C get?

A. 300

B. 400

C. 100

D. 200

Solution:

Payment of A and B combine = 7/11 of 550.

So payment of C = 4 / 11 of 550.

C = 200

Correct Option is D

Problems on Ages

Q1. If the age of a wife is reversed, the figures represent her husband's age. The husband is older than her and the difference between their ages is one-eleventh of their sum. Find the age of the wife and the husband (in years).

Ops: A. 34, 43

B. 23, 32

C. 24, 42

D. 45, 54

Solution:

Let x and y be the ten's and unit's digits respectively of the numeral denoting the woman's age.

Then, woman's age = (10X + y) years; husband's age = (10y + x) years.

Therefore (10y + x)- (10X + y) = (1/11) (10y + x + 10x + y)

⇔ (9y-9x) = (1/11)(11y + 11x) = (x + y) ⇔ 10x = 8y ⇔ x = (4/5)y

Clearly, y should be a single-digit multiple of 5, which is 5.

So, x = 4, y = 5.

Hence, woman's age = 10x + y = 45 years.

Husband age10y+x=54

Correct answer: Option D

Q2. A boy when asked how old was he answered "Two days back I was 10 years old and next year I shall be 13. If you know what's today, you'll be able to figure out my birthday and that'll give you my age", How old was he?

Ops: A. 12 years

B. 10 years

C. 11 years

D. 9 years

Solution:

Two days back he is 10

This year he is completing 11

So currently he is 11 years

Correct answer option b

Q3. Paul's age is three times of the sum of the ages of his two daughters. Five years from now, his age will be twice the sum of the ages of his two daughters. Find his age two years from now.

Ops: A. 52 years

B. 47 years

C. 57 years

D. 42 years

Solution:

Let the age of daughter be x and y

Paul's age = 3x

Five years from now

P+5 = 2(x+10)

P+5= 2x+20

3x-2x= 15

= 15

Paul's age = 45

Two years from now = 47 years

Correct answer option b

Q4. Kushal's age is three times the sum of the ages of his two sons. 5 years hence. His age Will be double the sum Of their ages. Find Kushal's present age.

A. 45 years

B. 35 years

C. 25 years

D. 65 years

Solution:

Let the sum of ages of two sons be x years

Age of man = 3x years

After 5 years age of the man = (3x + 5) years

Sum of ages of two sons = (x + 10) years

Given, (3x + 5) = 2(x + 10)

⇒ (3x + 5) = 2x + 20

⇒ x = 15

Hence 3x = 3(15) = 45

Thus the age of the man(father) is 45 years

Correct Option is A

Q5. Ram's mother's age is 20 years more than two bmes of his age. Ifthe sum of their ages is 35 years, then what is Ram's age?

A. 2 years

B. 4 years

C. 5 years

D. 10 years

Solution:

Let Ram's age be x.

Ram's mother's age = 2x + 20

According to question 2x + x + 20 = 35

3x + 20 = 35.

x = 5.

Correct Option is C

Numbers, Relation and Functions

Q1. The difference between a three digit number and the number formed by reversing its first 2 digits is 450. The value of the digit not getting reversed is 1. If sum of the digits of the number is 8, determine the number.

Ops: A. 521

B. 143

C. 611

D. 422

Solution:

From given question

The value of the digit not getting reversed is 1 and difference is 450 so number must be greater than 450.

So 521-152=369

611-161=450

Correct Answer: Option C

Study the following information and answer the question that follows.

$f(x) = g(x) – h(x)$

$g(x) = x^3 + 3x$

$h(x) = 3g(x)$

Q2. Find the value of f(1).

Ops: A. -8

B. 4

C. -28

D. -18

Solution:

$f(x) = g(x) – h(x)$

$g(x) = x^3 + 3x$

$h(x) = 3g(x)$

$f(1) = g(1) – h(1)$

$g(1) = 1^3 + 3*1 = 4$

$h(1) = 3g(1) = 12$

$f(1) = 4-12 = -8$

Correct Answer: Option A

Q3. Find the value of $f(2) + h(3)$.

Ops: A. -136

B. 88

C. -80

D. -112

Solution:

$f(2) = g(2) – h(2)$

$g(2) = 2^3 + 3*2 = 14$

$h(2) = 3g(2) = 42$

$f(2) = 14-42 = -28$

$f(3) = g(3) – h(3)$

$g(3) = 3^3 + 3*3 = 36$

$h(3) = 3g(3) = 108$

$f(2)+ h(3) = -28+108 = 80$

Correct answer: Option c

Q4. If the sum of three consecutive numbers is 228, determine the second number.

Ops: A. 75

B. 76

C. 77

D. 74

Solution:

Let 3 consecutive numbers be x,x+1,x+2

Now,

X+x+1+x+2= 228

3x= 225

X= 225/3

X= 75

Second number= 75+1

= 76

Correct answer: option b

Q5. Read the information given below and answer the questions that follow.

a@b = (a-b)/2

a#b = ab

a^b = (a+b)/3

Find the value of [(2#4)@(5^3)]

Ops: A. -117/2

B. 8/3

C. 0

D. 1

Solution:

[(2#4)@(5^3)]

= [(2*4)@(8/3)]

8 @ 8/3

(8-8/3)÷ 2

(24-8)/6

16/6= 8/3

Correct answer option b

Q6. $(4/21)^{th}$ of 294 is:

Ops: A. 84

B. 42

C. 56

D. 70

Solution

$= \frac{4}{21} * 294$

= 1176/21

= 56

Correct answer option c

Q7. Read the information given below and answer the question that follows.

(x ? y) = (x + y)/2

(x & y) = $(x^2 - y^2)$

(x $ y) = (x - y)/2

Question: Determine the value of {[(3 ? 4) $ (3 & 2)] ? (4 $ 3)}

Ops: A. -3/4

B. -7/16

C. -1/8

D. -9/32

Solution:

{[(3 ? 4) $ (3 & 2)] ? (4 $ 3)}

7/2 $ 5] ? 1/2

= -3/4 ? 1/2

= -1/8

Correct answer option c

Q8. Read the information given below and answer the question that follows.

$f(x) = x^3$

$g(x) = x^2/8$

h(x) = f(x) – g(x)

Determine the value of hogof(x) for x = 2.

Ops: A. 10

B.20

C.40

D.60

Solution:

hogof(x) for x = 2.

Hogof(x)= gof[$(x^3-(x^2/8))$]

= gof[$(2^3 – (2^2/8))$]

= gof[(15/2)]

= f[$(15/2)*x^3$)]

= 15/2*8

=60

Correct answer: Option d

Q9. Find the number of zeroes in 69!.

Ops: A. 10

B. 12

C. 15

D. 18

Solution:

To find zero will take power of 5

5= 1

10=1

15=1

20= 1

25=2

30=1

35=1

40=1

45=1

50=2

55=1

60=1

65=1

Adding 1 we get 15

Correct answer option c

Q10. Read the information given below and answer the question that follow.

$f(t) = 4t - 5$

$g(t) = t^2$

$h(t) = 1/t$

Determine the value of fogoh(4)

Ops: A. -1

B. -19/4

C. -21/4

D. 0

Correct Option is B,

Solution:

fogoh(4) = f(g(h(t)))

From equation h (t) = 1 / t,

= f (g (1 / 4))

From equation $g(t) = t^2$,

$= f(1/16)$

From equation $f(t) = 4t - 5$

$= -19/4$.

Q12. Read the information given below and answer the question that follows.

$F(x)=x^3 - 3$

$G(x)=(1/x)-x$

g(x) (l/x) -x Find the value of fog(-l) - gof(-l).

A. -15/4

B. 0

C. 5/4

D. -27/4

Solution:

fog(-1) = f(g(-1))

from G(x)=(1/x)-x

f(g((1 / -1) - 1)

f(-2)

from $F(x)=x^3 - 3$

⇨ fog(-l) = (-2^3) – 3 = -8 -3 = -11

⇨ similarly gof(-l). = - 17/4

⇨ fog(-l) - gof(-l) = -11 – (-17/4)

⇨ -27/4.

Correct Option is D

Pipes And Cisterns

Q1. A pipe X can empty the tank in 12 minutes alone and in 8 minutes along with pipe Y. What is the time required by the pipe Y alone to empty the tank completely?

Ops: A. 32 minutes

B. 30 minutes

C. 38 minutes

D. 24 minutes

Solution:

Pipe X empty a tank in 1 minute =1/12

Pipe X+Y empty a tank in 1 minute =1/8

Pipe Y alone empty a tank in 1 minute =1/12 + 1/y=1/ 8

1/y=1/8-1/12

y=24 min

Correct answer: option D

Q2. Two pipes P and Q would fill a cistern in 24 hours and 32 hours respectively. If both the pipes are opened together, find when the first pipe must be turned off so that the cistern may be just filled in 16 hours.

Ops: A. 10 hours

B. 11 hours

C. 12 hours

D. 13 hours

Solution:

Work done by Q in 16 hours = 1/32*16 = 1/2

This means 1/2 work to be done by P

For that P requires = 24*1/2 = 12 hours

Which means after 12 hours the P needs to turn off.

Correct answer option c

HCF and LCM

Q1. The sum of the LCM and HCF of two numbers is 1884 and their difference is 1860. If the difference between the numbers is 12, then determine the sum of the numbers?

Ops: A. 324

B. 364

C. 300

D. 342

Solution:

LCM + HCF = 1884..(1)

LCM - HCF = 1860..(2)

Let the numbers be x & y,

x - y =12

x= y + 12

We know,

x . y = HCF*LCM

y(y + 12) = HCF* LCM

$y^2 + 12\ y = 12*1872$

$y^2 + 12y - 22464 = 0$

y = 144 or -156

We discard the negative answer

y =144

x = 156

x + y =300

Correct answer: Option C

Divisibility

Q1. How many numbers between 500 to 900 (both inclusive) are divisible by either 7, or 9?

Ops: A. 76

B. 84

C. 95

D. 69

Solution:

896 = 504 + (n-1)7

896 - 504 = 7 (n-1)

7(n-1) = 392

n-1 = (392/7)

n-1 = 56

n = 56+1

n = 57

Hence, 57 numbers are between 500 and 900 that are divisible by 7.

Numbers between 500 and 900 that are divisible by 9 are 504, 513, …891, 900.

Here, a= 504 , d= 9, an= 900

AP formula

an= a+(n-1)d

900 = 504 + (n-1)9

900- 504 = 9(n-1)

396 = 9(n-1)

396/9= n-1

44= n-1

44+1= n

n = 45

Hence ,45 numbers are between 500 and 900 divisible by 9.

we need to eliminate numbers which are divisible by (7*9) = 63.

Such numbers that are divisible by 63 are 504, 567,…819, 882.

Here , a= 504, d= 63, an= 882

AP formula

an= a+(n-1)d

882 = 504 + (n-1)63

882-504 = 63 (n-1)

378= 63 (n-1)

6 = n-1

6+1= n

n = 7

Hence, 7 numbers between 500 and 900 divisible by 63.

The total numbers between 500 and 900 divisible by either 7 or 9

= 57 + 45 - 7

= 95

Hence, The total numbers between 500 and 900 divisible by either 7 or 9 are 95.

Correct answer: Option C

Q2. What least number must be subtracted from 1294 so that the remainder when divided by 9, 11, 13 will leave in each case the same remainder 6?

Ops: A. 9

B. 1

C. 4

D. 12

Solution:

Taking LCM (9, 11, 13) = 1287

On divided 1294 by 1287 we get 7 as remainder

Now having 6 as exactly the remainder

= 7-6

= 1

Correct answer option b

Q3. Find the number of divisors of 51200.

Ops: A. 54

B. 48

C. 36

D. 24

Solution:

Divisor of 51200

Divided 51200 by 2

Factors are 1, 2, 51200, 25600

Divided by 3 not divisible

By 4

1, 2, 4, 51200, 12800

Following same process we get 36 divisors

Correct answer option c

Mensuration

Q1. The curved surface area of a right circular cone is 600 cm^2 and its slant height is 30 cm.

Calculate its capacity.

(Note: Use $\pi = 22/7$)

Ops: A. 1640 cm^3

B. 1244 cm^3

C. 1232 cm^3

D. 1370 cm^3

Solution:

Curved area =600

π r (r+l) =600

l=30

r=6.36

We know that,

Slant height $(l)^2$ = $radius^2$ + $height^2$

$l^2 = r^2 + h^2$

$\Rightarrow 30^2 = (6.36)^2 +^2 h^2$

$\Rightarrow 900 = 40.45 + h^2$

$\Rightarrow h^2 = 900 - 40.45$

$\Rightarrow h^2 = 859.55$

$\Rightarrow h = \sqrt{859.55}$

$\Rightarrow$ h = 29.31 cm

Volume of the cone = $1/3*\pi r^2 h$

$\Rightarrow$ 1/3*22/7*6.36*6.36*29.31

$\Rightarrow$ 26082.71/21

$\Rightarrow$ 1242.03 cm^2

=1242 cm^2

Correct Answer: Option B

Q2. Calculate the area of a triangle with sides 15 cm, 36 cm and 39 cm.

Ops: A. 268 sq. cm

B. 270 sq. cm

C. 284 sq. cm

D. 260 sq. cm

Correct answer: B

Solution:

S= (15+36+39)/2= 90/2= 45

S= 45 cm

Area of Δ by Heron's Formula =

$\sqrt{s(s-a)(s-b)(s-c)}$

$= \sqrt{45(45-15)(45-36)(45-39)}$

$= \sqrt{45 \times 30 \times 9 \times 6}$

$= \sqrt{(5\times9)\times(6\times5)\times(9\times6)}$

$\sqrt{5\times5\times6\times6\times9\times9} = 5 \times 6 \times 9$

Area of Δ by Heron's Formula = 270 cm^2

Q3. A right pyramid having rectangular base of dimensions 15 m x 6 m and height of 10 m will have capacity of:

Ops: A. 200 m^3

B. 300 m^3

C. 165 m^3

D. 250 m^3

Solution:

Capacity = length*breadth +breadth*height +height*length

= 15*6+6*10+10*15

= 90+60+150

= 300cm3

Correct answer option b

Q4. The areas of two similar triangles: ΔMNO and ΔXYZ are 121 cm^2 and 196 cm^2 respectively. If YZ measures 26.6 cm, then measure of NO is:

Ops: A. 23.6 cm

B. 25.7 cm

C. 20.9 cm

D. 19.3 cm

Solution:

MNO/XYZ= $NO/(26.6)^2$

121/196= NO/26.2

On squaring

11/14= NO/26.6

NO= 20.9

Correct answer option c

Q5. Amit has a garden of 100m^2. He uses 50% of the area for growing roses. 20% of the remaining area for growing vegetables and the rest of the area is filled by 5 rows of the sunflower plant. How much area is covered by each row?

Ops: A. 10 m^2

B. 20 m^2

C. 8 m^2

D. 40 m^2

Solution:

Growing roses=100*50/100= 50m/2

Remaining 50*20/100= 10m2

Now for rows we have 80m2 by 5 rows

So each row have 8m

Correct answer option c

Q6. There is an equilateral triangle of which each side is 2 m. With all the three corners as centers, circles each of radius 1 m are described. Find the area ofthe remaining porbon (i.e. excluding the area common to all the circles and the triangle).

A. 0.09m^2

B. 8. 0 0.25m^2

C. 0 0.04m^2

D. D. 0 0.16 m^2

Solution:

Area of Equilateral Triangle => A = $\frac{\sqrt{3}}{4}$ a^2

Hence A = 1.73 m^3

Area of sectors of a circle id given by *Area of sector* = $\pi r^2(\frac{C}{360})$

Here C = 60 hence it is an Equilateral Triangle

Putting values in the above equation we get Area of sector = 0.52 m^2

area of three such sectors = 3*0.52 = 1.57.

area of triangle – area of sectors = remaining area => 1.73 – 1.57 = 0.16m^2

Correct Option is D

Logarithm

Q1. If $\log(N)^3 - \log 2N = 3 \log 3 - \log 6$, then find the value of **"N"**.

Ops: A. 9

B. 3

C. log 3

D. 2

Solution:

3 log(N) – log 2N = 3 log 3 – log 6

Using

$\log(N)^a = a \log N$

log x – log y =log x/y

3 log(N/2N) = 3 log (3 / 6)

N/2N= 3 / 6

N= 3

Correct answer: Option B

Q2. If $\log_x(16^2+16) - \log_4(16+1) = 2$, then the value of 'x' is:

Ops: A. 16

B. 8

C. 2

D. 4

Solution:

Log(16 ^2 + 16) - log4(16+1)= 2

2log 16* log16 - 2 log4 4 - log1=2

4 log 16 - 2= 2

4 log 16 = 4

Log16 = 1

X = 16

Correct answer option a

Q3. Simplify:

$\log_6(3) * \log_9(6) * \log_{12}(9) * \log_{15}(12) * \_ \_ \_ * \log_{21}(18)$

Ops: A. None of the mentioned options

B. $\log_{21}(3)$

C. $\log_{21}(3 + 6 + 9 + \_ \_ \_ + 18)$

D. $\log_3(21)$

Solution:

log6(3) * log9(6) * log 12(9) * log15(12) * _ _ _ * log 21(18)

Log3(3)[log2(1)*log3(2).....]

Log1= 0

So = 0

Correct answer option a

Algebra

Q1. Which operator would replace the **"?"** to satisfy the given equation?

0.5 + 0.6 x 12 **?** 2 – 1.25 = 2.85

Ops. A. –

B. +

C. x

D. ÷

Solution:

Using hit and trial method and highest priority is / so I try it first.

0.5 + 0.6 x 12 / 2 – 1.25 = 2.85

0.5 + 0.6 x 6 – 1.25 = 2.85

.5+3.6-1.25= 2.85

It satisfy so answer is ÷

Correct Answer: option D

Q2. An employer engaged a servant with free boarding and lodging for one year with the condition that the servant will be given Rs. 2500 and a uniform at the end Of the year. The servant agreed but served the employer only for 10 months and thus received RS. 2000 and a uniform. The price Of the uniform is

A. Rs. 500.

B. Rs. 250

C. Rs.400

D. Rs. 350

Solution:

12 months wages = Rs. 2500 + Uniform;

And 10 months wages = Rs. 2000 + Uniform

2 months wages = 500

12 months wages = Rs. 3000

Cost of the uniform = Rs. 500.

Correct Option is A

Ratio and Proportion

Q1. The ratio of two numbers is 4 : 5 and the difference of the cubes of the numbers is 1647.

Find the sum of the numbers.

Ops: A. 18

B. 12

C. 15

D. 27

Solution:

Let the numbers be 4x and 5x.

As per given condition we have

$(5x)^3-(4x)^3=1647$

$125x^3-64x^3=1647$

$61x^3=1647$

$x^3=61/61$

$x^3=27$

$x=3$

Now,

$4x=4\times3=12$

$5x=5\times3=15$

Hence required numbers are 12 and 15 and sum is 12+15=27

Correct answer: Option D

Q2. The prices of a sedan car and a hatchback variants are in the ratio of 8 : 7. If the sedan car costs Rs. 40,000 more than a hatchback. A man decided to purchase both the models, what will be the total expense?

Ops: A. Rs. 2,80,000

B. Rs. 4,80,000

C. Rs. 6,00,000

D. Rs. 3,20,000

Correct Answer: A

Solution:

Given,

Ratio of price of a sedan car and a hatchback variant is 8:7

Price of Sedan is 40000 more than the hatchback.

Let the price of hatchback be x.

Price of sedan car is(x+40000)

According to the question,

8:7=(x+40000) : x

Now, value of x is 35000 .

Therefore, price of hatchback is 35000 .

Price of sedan car is (35000+40000)

=75000

Total expense =(75000+35000)

=110000

Q3. The final assembly of a car is done using four components, whose costs are in the ratio of 1 : 3 : 4 : 5. If the cost of manufacturing these components increase by 10%, 20%, 20% and 10% respectively, then what is the hike in the price of the product?

Ops: A. 13.25

B. 0.0833

C. 0.1538

D. 0.1233

Solution:

Lets the ratio of car components be 1x, 3x, 4x, and 5x

Now it is given that manufacturing of these is increased by 10%, 20%, 20%, and 10% respectively.

$\Rightarrow \frac{10+100}{100} * 1 + \frac{20+100}{100} * 3 + \frac{20+100}{100} * 4 + \frac{10+100}{100} * 5$

$\Rightarrow \frac{11}{10} + \frac{36}{10} + \frac{48}{10} + \frac{55}{10}$

⇨ $\frac{150}{10} = 15$

Hike in percentage = $\frac{New\ Value - Original\ Value}{Original\ value}$

Hike in percentage= $\frac{15-13}{13} = 0.1538$

Correct answer Option c

Q4. Two numbers are in the ratio of 8 : 7, then 40 is added to the first number and 20 is subtracted from the second number to make the new ratio of the numbers 4 : 1. The larger of the two numbers initially was:

Ops: A. 48

B. 18

C. 28

D. 32

Solution:

8x+40/7x-20 = 4/1

8x+40= 28x-80

120= 20x

X= 6

8x= 48

Correct answer option a

Permutation and Combination

Q1. In a locality three magazines are read, namely India Today, Sports Star and Business India. 45 people read only one magazine, 20 read exactly two magazines and 5 read all the three. There is no one who does not read any of the three magazines.

How many peoples are there in the locality?

Ops: A. 70

B. 90

C. 50

D. 65

Solution: According to the question

45 read one magazine

20 read both magazine

So total is 65

Now the 5 which reads 3 of the magazine will be among these only so the total people are. 65

Correct answer option d

Arithmetic progression, Geometric progression

Q1. Determine the 17^{th} term of the following A.P.

0.6, 1.2, 1.8, ...

Ops: A. 11.4

B. 10.2

C. 10.8

D. 9.6

Solution:

17 term = a+16d

A= 0.6

D= 0.6

0.6+ 16*0.6

10.2

Correct answer option b

Q2. In a polygon the sequence of different interior angles is in AP. Let the angle with the least value be 120^0 and the common difference be 5^0. Calculate the number of sides of the polygon.

Ops: A. 12

B. 6

C. 8

D. 9

Correct Option is D,

Solution: Smallest angle = 120^0 degree

Common difference=5^0

A P is 120, 125, 130,……..

The sum of interior angles of a polygon = (n-2)180

Hence Sum of n terms of an A P = (n-2) 180^0

n/2 {2*120 + (n - 1) 5 } = 180(n-2)

5n^2 -125n +720 = 0

n^2 -25n +144 = 0

n=9 or 16

hence number of sides can be 9 or 16

Geometry

Q1. Consider the following two curves in the x-y plane:

$y = x^3 + x^2 + 5$

$y = x^2 + x + 5$

Which of the following statements is true for $-2 \leq x \leq 2$?

Ops: A. The two curves intersect once

B. The two curves intersect twice

C. The two curves do not intersect

D. The two curves intersect thrice

Solution:

For x= -2

First curve have the value y= 1 (-2,1)

Second curve have the value y = 7 (-2,7)

For x= -1

First have (-1,5)

Second have (-1,5)

For x = 0

First have (0,5)

Second have (0,5)

For x= 1

First have (1,7)

Second have (1,7)

So from the points it can be found that curve intersect at 3 points.

Correct answer option d

Q2. Of the four vectors A, B, C, D find out which pair forms an orthogonal set when,

A = 2i-3j, B = -7i+j, C = 3i+2j, D = i+j

Ops: A. AC

B. BC

C. AD

D. BD

Correct Option is D.

Solution:

Orthogonal vectors means the product is 0.

B*D=(3i+2J)*(2i-3J)

=> 3*2(i*i) – 2*3(j*j) = 0

Q3. A hunter locates two monkeys on two large trees, P and Q which are at a distance of 500 m. He then tries to locate himself at a position R such that the angle PQR is 90^0 and the angle QPR is 45^0. How far is the hunter from Q?

Ops: A. 250 m

B. 500 m

C. 650 m

D. 1000 m

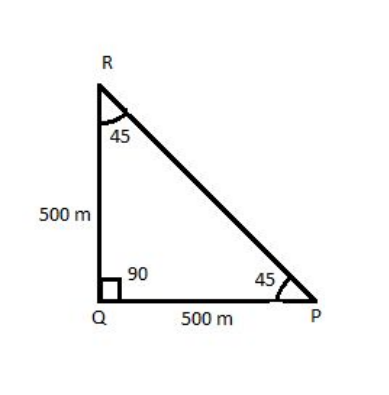
Solution:

As angle QPR is 45 which makes it an ISOSCELES RIGHT TRIANGLE with QP and QR of equal length

So QR is equal to 500m.

Correct Option is B.

Q4. Given that the sum of all the interior angles of a regular polygon measures 1080^0, calculate the number of sides present in the polygon.



Ops: A. 10

B. 8

C. 6

D. 12

Correct Option is B.

Solution: Sum of Interior Angles of a polygon 180(n−2) where n is the number of sides.

So 180 (n−2) = 1080

n=8.

Q5. In ΔMNO, G is the centroid and MD, NE and OF are three medians and the area of ΔMGE is 20 cm^2. The area of quadrilateral NDGF is:

Ops: A. 50 cm^2

B. 40cm^2

C. 20cm^2

D. 10cm^2

Solution:

The median divides a triangle into two triangle with equal area.

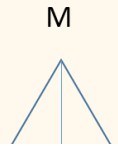
Since NE is median of △MNO, area △ONE=area △MNE

Also GE is median of △MGO, area △OGE= area △MGE

Similarly

area △OMD= area △NMD

area △OGD=area △NGD



area △MOF=area △NOF

area △MGF=area △NGF

Using these we establish that the △OGE, △MGE, △OGD, △NGD, △MGF, and △NGF have same area.

So the required area will be $40cm^2$

Correct Option is B

Average

Q1. Determine the average of the following data.

45, 50, 33, 22, 15

Ops: A. 32

B. 34

C. 35

D. 33

Solution:

Average = (45+50+33+22+15)/5= 165/5

= 33

Correct answer option d

Q2. The cost of organizing a party varies directly as the number of invitees. If there are 40 invitees, the average cost works out to Rs. 200 per head. If there are 50 invitees, the cost works out of Rs. 180 per head. Find the variable cost and the fixed cost for conducting the party.

Ops: A. Rs. 100, Rs. 4000

B. Rs. 100, Rs. 2000

C. Rs. 200, Rs. 3000

D. Rs. 200, Rs. 2000

Correct Option is A

Solution:

If fixed cost = x and cost per invitee = y, then

x + 40y = 200*40 or x + 40y = 8000 ----(i) &

x + 50y = 180*50 or x + 50y = 9000 ----(ii)

On solving (i) & (ii),

x=4000, y=100

Percentage

Q1. What is the percentage increase in the population of the country from 2014 to 2017 if it increases at the rate of 20% from 2014 to 2015 and again 20% from 2015 to 2016 but reduces at a rate of 30% during 2016 to 2017?

Ops: A. 0.7%

B. 0.9%

C. 0.6%

D. 0.8%

Solution:

Population is increased by 20% from 2014-2015

⇨ Multiplying Factor = 1.2

Population is increased by 20% from 2015-2016

- ⇨ Multiplying Factor = 1.2

Population is decreased by 30% from 2016-2017

- ⇨ Multiplying Factor = 0.7

Percentage increase in the population = 1.2 * 1.2 * 0.7

= 1.008

Which means population increases by 0.8%

Correct answer: Option d

Q2. A person gains 10% while buying and 10% while selling by using false weights, then what is his total profit percentage.

Ops: A. 20%

B. 25%

C. 21%

D. 15%

Solution:

Total Percentage= (10+10)*100 / 100

= 20%

Correct answer option a

Q3. If the sides of a square are decreased by 37%, find the percentage decrease in its area.

Ops: A. 62.5%

B. 60.3%

C. 61.8%

D. 63.4%

Solution:

-37-37+37*37/100

= -74+13.69

= 60.31

Correct answer option b

Q5. If the price is decreased by 56% and sales is increased by 72% then what will be the effect in percentage on the income?

Ops: A. 24.32% increase

B. 24.32% decrease

C. 23.22% increase

D. 22% decrease

Correct Option is B.

Solution: Let cost of each item = Rs.100 & sale = 100 item.

Money receipt = Rs . (100*100) = Rs.10000

New cost per item = Rs. 44 (100-56) and New sale = 172 (72 % increase of 100)

New Money Receipt = Rs.(44*172) = Rs.7568

Decrease in money receipt = (2432/10000)*100 = 24.32%

Q6. Kailash spends 75% of his income. His expenditures is increased by 10% and income by 20%. How much would his savings increase in percentage?

Ops: A. 50%

B. 49%

C. 65%

D. 35%

Correct Option is A

Solution: Let Income is 100

therefore Expense = 75

Increased Income = 120

Increased Expenses = 82.5 (earlier was Rs. 75 and later increased by 10% of 75 = 75 + 7.5)

Earlier Saving = 25

Increased total Saving = 37.5

Increase in Saving = 12.5

Percentage increase in Saving = 12.5/25*100 = 50%.

Speed, Distance and Time

Q1. A cheetah runs at a speed of 144 kmph. It covers a distance of 360 m in:

Ops: A. 7 seconds

B. 10 seconds

C. 8 seconds

D. 9 seconds

Solution:

Speed = Distance/Time

- ⇨ 144*5/18= 40m/s
- ⇨ T= 360/40

⇨ T=9sec

Correct answer option d

Q2. A car travels first 300 kms at an average rate of 60 kmph and further travels the same distance at an average rate of 40 kmph. Determine the average speed of the car over the whole journey.

Ops: A. 48 kmph

B. 50 kmph

C. 35 kmph

D. 42 kmph

Solution:

S1= 60km/hr,D1=300km

T1=D1/S1

T1=300/60

T1=5 hour

S2=40km/h,D2=300

T2=D2/S2

T2=300/40

T2=15/2 hr

Total Time=T1+T2

Total time=15/2h+5h

Time=12.5 h

Total Distance=D1+D2

Distance=300+300

Distance=600

Average speed= total distance/total time

Average speed=600/12.5

Average speed=48km/h

Correct answer: Option a

Q3. A boat takes 20 hours to travel downstream from point P to point Q and coming back to a point R midway between P and Q. If the velocity of the stream is 5 kmph and the speed of the boat in still water is 13 kmph, then what is the distance between P and Q?

Ops: A. 150.3 km

B. 200 km

C. 180 km

D. 169.4 km

Solution:

Downstream=13+5= 18

Upstream= 13-5= 8

Let distance be x half distance be x/2

X/18 + x/2/8= 20

X/18+x/16 = 20

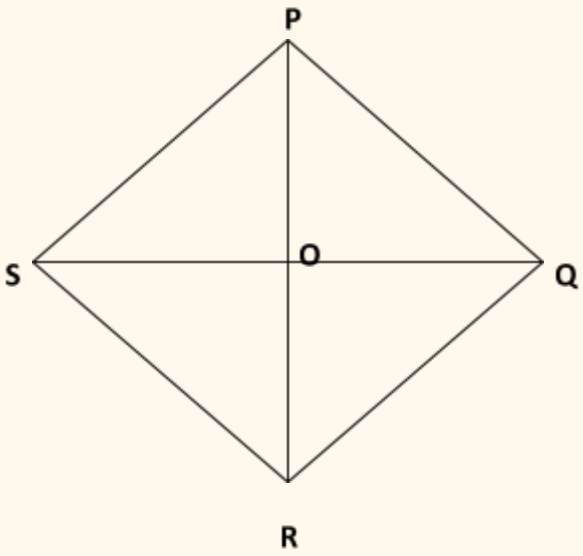
Solving

X= 169.4

Correct answer option d

Q4. Four persons P, Q, R and S started from the points P. Q, R and S respectively towards O simultaneously. P is the fastest and waited 10, 15, 20 minutes to meet Q, R and S respectively after reaching "O". What is the initial distance between P and Q, if the speed of P is 60 kmph and S reaches point "O" in 30 minutes?

(PQRS is a square)



PQ = QR = RS = SP

Ops: A. 30 km

B. 17.32 km

C. 14.14 km

D. 24 km

Solution:

Since S reaches in 30 minutes so from question we can say P takes 10 minutes as he reached the destination 20 minutes earlier

Total distance covered in 10 minutes is 10 km as P's speed is 60km/h

And it is also from figure we can say PO = OQ = 10 km

And PQ is hypotenuse of triangle POQ so by Pythagoras theorem

hypotenuse = 14.14.

Correct Option is C

Q5. A train starts from Madgaon at 5 p.m. and reaches Vasco at 6 p.m. Another train starts from Vasco at 5 p.m. and reaches Madgaon at 6:30 p.m. At what time will the two trains cross each other?

Ops: A. 5:36 p.m.

B. 5:30 p.m.

C. 5:45 p.m.

D. None of the mentioned options

Solution:

let t be the time, D be the distance.

train A leaves Madgaon at 5.p.m.

train B leaves Vasco at 5.p.m.

so, the two trains are differed by 0 hours.

and let the first train travel for 1hours(from 5.p.m to 6.p.m),so the speed of the first train is:

D/1kmph.

and second train travel for 1.30hrs(from 5-6.30p.m)hence speed of second train is:

D/1.30kmph=2D/3kmph.

now the two trains meet

t*(D/1)+(t-0)*(2D/3)=D

by solving we get t=1hours.

thus two trains are meet exactly 1 hours after 5.p.m

i.e.at 6p.m

Correct Option is D

Q6. Two trains for Princetown leave Princeton at 9 a.m. and 9:30 a.m. and travel at 36 kmph and 54 kmph respectively. At what distance from Princeton will the two trains be together?

Ops: A. 36 km

B. 54 km

C. 72 km

D. None of the mentioned options

Solution:

Distance covered by First train by 9.30AM = 18 km.

The train A travelled distance before starting of second train is 18km.

After one hour, second train is going start and relative speed of the second train with comparison of first train is 54-36 = 18km

To cover 18km with the speed of 18km per hour will take , 1 hours for train B to meet train A

distance covered by second train in 1 hrs = 54*1 = 54 kms.

Correct Option is B

Profit and Loss

Q1. Two friends bought two bags whose prices were in the ratio of 1 : 3. If they sold them at a loss of 10%, the difference of the money earned by them was Rs. 360. What was the cost price of the costlier bag?

Ops: A. Rs. 600

B. Rs. 900

C. Rs. 450

D. Rs. 300

Solution:

Cost of bags be x and 3x

For x/100 * 90= 9x/10

3x*90/100= 27x/10

18x/100= 360

X= 200

Costly = 600

Correct answer option a

Mixture and Allegation

Q1. A mixture of certain quantity of orange juice with 16 litres of water is worth 90 paise per litre. If pure orange juice costs 108 paisa per litre, what is the amount of juice in the mixture assuming water is free of cost?

Ops: A. 70 litres

B. 80 litres

C. 70 mili litres

D. 80 mili litres

Solution:

Let the quantity of orange juice be x litre.

Cost of 1 litre orange juice = 108 paisa

Then, we have

(x +16)*90 = x*108 + 16*0 (cost of water is 0)

90x + 16*90 = 108x

18x = 16*90

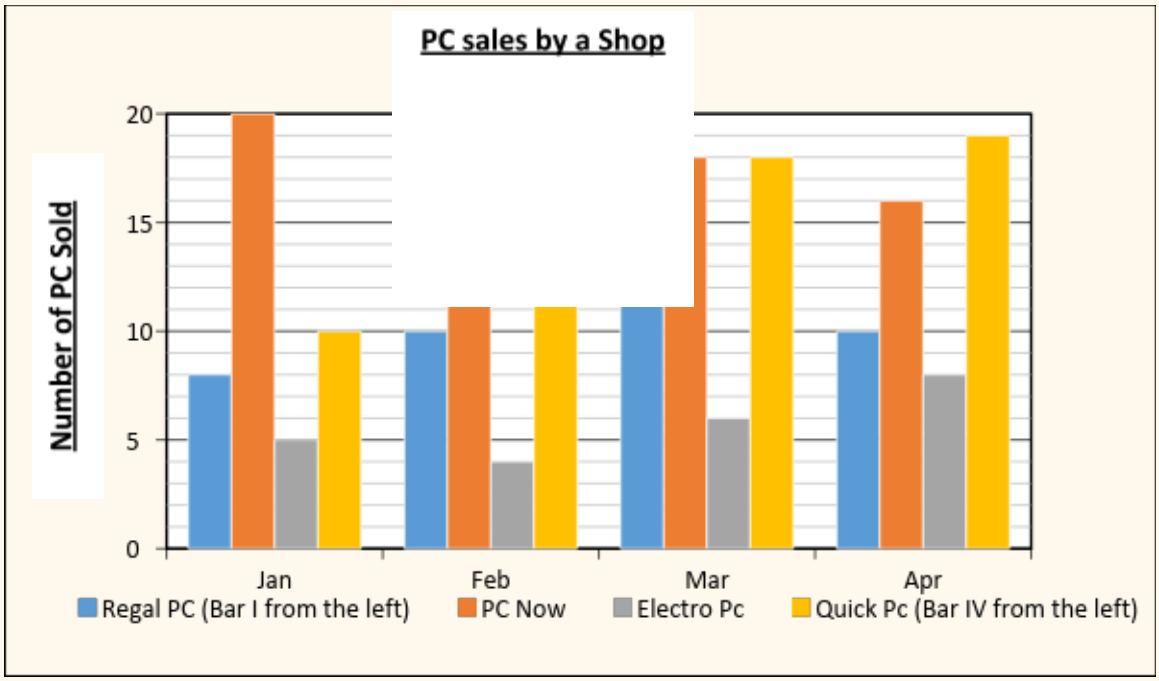
X = (16*90) / 18 = 80

Thus, the quantity of orange juice is 80 L

Correct Option is B

DATA INTERPRETATION

Study the graph given below and answer the questions that follow.



Q1. Approximately what percentage of Regal PC's sales was made in April?

Ops: A. 16%

B. 19%

C. 26%

D. 28%

Solution:

Total PC sales in april = 10+16+8+19

Regal PC's In April = 10

= 10/55*100

= 19%

Correct answer: Option b

Q2. If the average profit made on each PC sold by Quick PC over all four months was Rs. 62, what was the total profit over the four months of this shop?

Ops: A. Rs. 3,875

B. Rs. 3,144

C. Rs. 3,782

D. Cannot be determined

Solution:

Total profit is

= (62*10)+(62*14)+(62*18)+(62*19)

= Rs. 3782

Correct answer option c

Probability

Q1. If two unbiased dice are rolled together, what is the probability of getting no difference of points?

A. 1/2

B. 1/3

C. 1/5

D.1/6

E.1/36

Correct Op: D

Solution: Total number of all possible happenings= 6x6= 36

If two unbiased dice are rolled together, there are 6 outcomes.

Hence the probability of getting no difference of points

= 6/36=1/6

Q.2 Jack has 3 red balls ,five blue balls and four black balls.The average price of red balls is Rs. 7 and that of the blue ball is Rs.6.If the average price of the black ball is Rs.5, then find the average price (approximate) of all the balls.

Ops. A. Rs. 6

B. Rs. 8

C. Rs. 9

D. Rs. 7

Correct option is A

Solutions:-

total red balls price=3 x 7=21

total blue balls price= 5 x 6=30

total black balls price= 4 x 5=20

average=(21+30+20)/12

average(approximate)=6

Q3. A card is drawn randomly from 52 cards. What is the probability that the card drawn is a face card (Jack, Queen or King)

a. 1/13

b. 2/13

c. 3/13

d. 4/13

Solution

Total number of cards, n(S) = 52

Total number of face cards, n(E) = 12

P(E) = n(E) / n(S) = 12 / 52 = 3 / 13

correct option is C,

Time and Work

Q1. 30 men working 7 hours a day can do a work in 18 days. In how many days will 21 men working 8 hours a day do the same work?

Ops: A. 22.6 days

B. 20 days

C. 22.1 days

D. 22.5 days

Correct option is D

Solution:

Let required days be n.

30 × 7 × 18 = 21 × 8 × n

n = 30 × 7/21 × 18/8 = 180/8 = 22.5 days

Q.2 Olivia and Emma, alone ,complete a job in 9 days and 12 days respectively. Olivia started the job and they worked on alternate days.How long did they take to complete the job ?

Ops. A. 11.22 days

B. 10.25 days

C. 10.75 days

D. 11.50 days

Correct option is B

Solutions:-

In 2 days Olivia and Emma will do work=1/9+1/12=7/36

So after 10 days the remaining work is equal to =1- (7/36)*5=1/36

After alternate works Olivia will work on 11th day so total time=(1/36)*9=0.25

total days=10+0.25=10.25

Q3. P is able to do a piece of work in 15 days and Q can do the same work in 20 days. If they can work together for 4 days, what is the fraction of work left?

a. 8 / 15

b. 7 / 15

c. 11 / 15

d. 2 / 11

Solution

Amount of work P can do in 1 day = 1/15

Amount of work Q can do in 1 day = 1/20

Amount of work P and Q can do in 1 day = 1/15 + 1/20 = 7/60

Amount of work P and Q can together do in 4 days = 4 × (7/60) = 7/15

Fraction of work left = 1 – 7 / 15 = 8 / 15

correct option is b,

Q4. 3 man can complete a piece of work in 4 days, my 15 women can do the same in four days. thirty women work for 1.5 day and handed the work to man. How many men can finish the remaining work in one day?

a. 3

b. 5

c. 6

d. 4

Solution

1 man day work = 1 / 3*4 = 1 / 12

1 woman 1 day work = 1 / 15 * 4 = 1 / 60

Work done by 30 women in 1.5 days = 1.5 * 1/60 * 30

= 0.75

Work left = 1 / 4 to be done by man = (1 / 12) * 3 = 1 / 4 = 0.25 = 3 men.

correct option is a,

Q5. 4 men can complete a piece of work in 2 days. 4 women can complete the same piece of work in 4 days whereas 5 children can complete the same piece of work in 4 days. If 2 men, 4 women and 10 children work together, in how many days can the work be completed?

a. 1 day

b. 3 days

c. 2 days

d. 4 days

Solution

2 men can do in 4 days

4 women can do in 4 days

5 children can do in 4 days

2m = 4w =5c can do in

So 2men and 4 women and 10 children complete the work

Efficiency of children and women convert in man = (2m + 2m +4m) = 8m

4 men complete the work is = 2 days

8 men complete the work is = 1 days

correct option is a

Problems on Ages

Q.1 Twenty-five years hence paul will be four times as old as he was five years ago. Determine his present age.

Ops. A. 20 years

B. 25 years

C. 10 years

D. 15 years

Correct option is D

Solutions:-

x+25=4(x-5)

x=15

Q2. Ten years ago, Pradeep was half of Quarashi's age. If the ratio of their present ages is 3:4, what will be the total of their present ages?

a. 45

b. 40

c. 35

d. 30

Solution

Let present age of Pradeep and Quarashi be 3x and 4x respectively.

Ten years ago, Pradeep was half of Quarashi age

$(3x-10) = 1/2\ (4x - 10)$

$\Rightarrow 6x-20=4x-10$

$\Rightarrow 2x=10$

$\Rightarrow x=5$

Total of their present ages

$=3x + 4x = 7x = 7\times5 = 35$

correct option is C

Q3. Sunil’s father age is 3 times more than Sunil’s age . After 8 years, he would be two and a half times of Sunil's age. After further 8 years, how many times would he be of Sunil's age?

a. 4 times

b. 5 times

c. 2 times

d. 3 times

Solution

Assume that Sunil's present age = x.

Then, father's present age =3x + x = 4x

After 8 years, father's age = 2(1/2) times of Sunils' age

(4x+8)=2(1/2)(x+8)

⇒4x+8=5 / 2(x+8)

⇒8x+16=5x+40

⇒3x=40−16=24

⇒x=24 / 3=8

After further 8 years,

Sunil's age =x + 8 + 8 = 8 + 8 + 8 = 24

Father's age =4x + 8 + 8 = 4×8 + 8 + 8 =48

Father's age/Sunil's age = 48 / 24 = 2

correct option is C,

Q4. Alexander told his son I was two third of your present age when you were born if present age of Alexander is 55 year then find the present age of his son

a. 27 years

b. 36 years

c. 30 years

d. 33 years

Solution

Let the present age of the SON be X

Then X years back,(when the SON is born), the MAN's age was 55- X = 2/3 * X Hence 5/3 * X = 55

and X = 3*55/5 = 33 years

correct option is d

Q5. 25 years hence Paul will be 4 times as old as he was 5 years ago determine his percentage.

a. 25 years

b. 15 years

c. 20 years

d. 10 years

Solution

present age of Paul = x

$x + 25 = 4 (x – 5)$

$x = 15$ years

correct option is b

Numbers, Relation and Functions

Q.1 Read the information given below and answer the question that follows.

$f(x)=x^3 - 3$

$g(x)=(1/x)-x$

What is the value of f/g, if x=3?

Ops: A. 9

B. -9

C. 3

D. -3

Correct option is B

Solution:-

$f(3)=3^3 - 3=24$

$g(3)=(1/3)-3=-8/3$

$f/g=(24 * -3)/8$

ans= -9

Q2. Customer buys a product from teleshopping network for rupees 19682 without interest and repays the amount in 8 months, it is known that installment beginning with the second being three times the preceding one find the amount of the last installment paid.

a. 6900

b. 10560

c. 11345

d. 13123

Solution

$x + 3x + 9x + 27x + 81x + 243x + 729x + 2187x = 19682$

$x = 3280$

$= 3280*2187$

= 13123 Rs

Correct option is 'd'

Pipes And Cisterns

Q.1 A tank is filled by three pipes with uniform flow.The first two pipes operating simultaneously fill the tank in the same time during which the tank is filled by the third pipe alone.The second pipe fills the tank 5 hours faster than the first pipe and 4 hours slower than the third pipe .What is the time required by the first pipe alone to fill the tank?

Ops. A. 10 hours

B. 15 hours

C. 18 hours

D. 12 hours

Correct option is B

Solutions:-

Suppose, first pipe alone takes x hours to fill the tank .

Then, second and third pipes will take (x -5) and (x - 9) hours respectively to fill the tank.

1+1=1x(x - 5)(x - 9)

x - 5 + x=x(x - 5)(x - 9)

(2x - 5)(x - 9) = x(x - 5)

x2 - 18x + 45 = 0

(x - 15)(x - 3) = 0

x = 15. [neglecting x = 3]

HCF and LCM

Q1. Three numbers are in the ratio of 2 : 3 : 4 and their L.C.M. is 240. Their H.C.F. is:

a. 40

b. 30

c. 20

d. 10

Solution

Let the numbers be 2x, 3x and 4x

LCM of 2x, 3x and 4x = 12x

12 x = 240

⇒x=240 / 12 = 20

H.C.F of 2x, 3x and 4x = x = 20

correct option is c

Divisibility

Q.1 How many numbers between 501 and 1000 (both included) are not divisible either by 3 or 5?

Ops: A. 264

B. 266

C. 263

D. 265

Correct option is B

Solution:-

No between 501 and 1000=1000-501=499

As both numbers are included =499+1

Total numbers between 501 and 1000=500

No divisible by 3=((999-501)/3)+1=167

No divisible by 5=((1000 - 505)/5)+1=100

No divisible by 3*5=((990-510)/15)+1=33’

No divisible only by 5 not by 3=100-33=67

total no that are not divisible either by 3 or 5=500-167-67=266

Q.2 How many numbers between 101 and 1400 (both included) are not divisible either by 3 or by 5?

Ops. A. 661

B. 662

C. 664

D. 663

Correct option is

Solutions:-

No between 101 and 1400=1400-101+1=1300(as both are included)

No divisible by 3=((1398-102)/3)+1=433

No divisible by 5=((1400-105)/5)+1=260

No divisible by 5 and 3=((1395-105)/15)+1=87

No divisible only by 5=260-87=173

Total no not divisible by 3 or 5=1300-433-173=694

Mensuration

Q.1 If a polygon has 44 diagonals , how many sides does it have ?

Ops: A. 18 sides

B. 14 sides

C. 11 sides

D. None of the mentioned options

Correct option is C

Solution:-

The number of diagonals for an n sided polygon = [n(n-3)]/2

therefore, 44 = [n(n-3)]/2

=> n*n - 3n - 88 = 0

=> n = 11

therefore, the no. of sides = 11.

Q.2 To enclose a field in a shape of right angled triangle, Sam used a 60m length wire .The area of the fields is 150m2 .What is the length of the largest side of the field?

Ops: A. 25m

B. 30m

C. 35m

D. 20m

Correct option is A

Solution:-

Let a be height of triangle,b be base of a triangle and c be largest side of triangle

a+b+c=60

area=(½)*ab=150

ab=150

for right angled triangle

c2=a2+b2

Now a+b=60-c on squaring both sides

a2+b2+2ab=3600-120c+c2

c2+2*150=3600-120c+c2

120c=3000

c=25m

Q.3 The volume of a cylinder is 448□ cm3 and height 7cm.Its lateral surface area is :

Ops. A. 352 cm2

B. 325 cm2

C. 532 cm2

D. 253 cm2

Correct option is A

Solutions:-

448□=□r27

r=8

2□rh=2 x 3.14 x 8 x 7=352 cm2

Q.4 If a sphere and a cube have equal surface areas, then the ratio of the diameter of the sphere to the edge of the cube is :

Ops. A. 1 : 2

B. 2 : 1

C. $\sqrt{\Pi}$: $\sqrt{6}$

D. $\sqrt{6} : \sqrt{\Pi}$

Correct option is D

Solutions:-

$4 \Pi r2 = 6a2$

$2r \sqrt{\Pi} = a \sqrt{6}$

$d:a= \sqrt{\Pi} : \sqrt{6}$

Q5. The ratio of length and breadth of a rectangle Park is 3:2. if a man cycling along the boundary of the park at a speed of 12 kilometre per hour complete 1 round in 8 minutes, then area of the park is.

a. 15360

b. 153600

c. 30720

d. 307200

Solution

Perimeter = Distance travelled in 8 minutes,

=> Perimeter = 12000/60 * 8 = 1600 meter. [because Distance = Speed * Time]

As per question length is 3x and width is 2x

We know perimeter of rectangle is 2(L+B)

So, 2(3x+2x) = 1600

=> x = 160

So Length = 160*3 = 480 meter

and Width = 160*2 = 320 meter

Finally, Area = length * breadth

= 480 * 320 = 153600

correct option is b

Q6. The diameter of a garden roller is 1.4 metre and is 2 metre long. How much area will it cover in 5 revolution?

a. 44

b. 42

c. 54

d. 52

Solution

Diameter = 1.4 m

r = d/2

r = 1.4/2

r = 0.7m

curved surface area of cyclinder =2*22/7*r^2

= 2 * 22/7 * 0.7 * 0.7

= 8.8 m^2

No of revolution = 5

Therefore = 8.8 * 5

= 44 m^2

correct option is a

Q7. A man rides at a speed of 36 km per hour he covers a distance of 60 m in:

a. 5 seconds

b. 10 seconds

c. 8 seconds

d. 6 seconds

Solution

36 km per hour = 36/60 = 0.6 km per m = 600 m per min

= 600 / 60 = 10 seconds

correct option is b

Q8. A conical tent has a floor area of 154 m square its height is 24 M how much Canvas is required for the tent?

a. 700 m square

b. 110m square

c. 450 m square

d. 550 m square

Solution

Conical tent has circular floor

area of floor = 154 m^2

$\pi r^2 = 154m^2$

$r^2 = 154m^2/22/7$

$r^2 = 154m^2 \times 7/22$

$r^2 = 7m^2 \times 7$

$r^2 = 49m^2$

$r = 7m$

In tent we don't put the canvas on the floor

slope height = l = ?

$l^2 = h^2+r^2$

$l = \sqrt{h^2+r^2}$

$l = \sqrt{576+49}$

$l = \sqrt{625}$

$l = 5m$

Curved surface area of cone = πrl

CSA = $22/7\times7\times5$

CSA = 22×5

CSA = 110 m^2

correct option is b

Logarithm

Q1. $Log_4(0)$ = ?A.

a. None of these

b. 5

c. 0

d. 1

Solution,

$Log_b(0)$ is undefined.

correct option is a

Algebra

Q.1 A dealer sold 2 types of cars last year X and Y. The revenue from the sale of each unit of car X is Rs.27 lakhs and that from the sale of each unit of car Y is Rs.51 lakhs .If dealer sold thrice as many units of car Y as car X,then what was the dealer's average revenue per unit sold of these two cars last year?

Ops: A. Rs. 31 lakhs

B. Rs. 32 lakhs

C. Rs. 41.6 lakhs

D. Rs. 45 lakhs

Correct option is D

Solution:-

Let there be x units of X cars and y units of Y cars sold

=> y = 3x

=> total no of units= x+3x where y=3x

=>(27x+51(3x)) / 4x

=>(180x)/4x

ans.45 lakhs

Q.2 A and B together have $1,210.If (4/15)th of A's amount is equal to (2/5)th of B's amount, then how much amount does B have?

ops: A. $484

B. $550

C. $664

D. $460

Correct Option is A

Solution:

A and B together have 1,210

Let A have **a** amount of money

Let B have **b** amount of money

=> a + b =1210

=>(4/15) x a =(2/5) x b

=>a=(3/2) x b

=>a/b=3/2

=> a : b = 3 : 2

=>B's share = Rs. (1210) x 2/5= Rs. 484

Q.3 The HR of a company divided Rs.8000 among 3 male employees,2 female employees and 2 sweepers. If each male receives four times as sweeper and each female receives three times as sweeper, how much does each male receive?

Ops. A. Rs.800

B. Rs.1600

C. Rs.2400

D. Rs.500

Correct option is B

Solutions:-

3male+2female+2sweeper=8000

Let sweeper get x amount each

then 1 male= 4x and 1 female=3x

3*4x+2*3x+2x=8000

20x=8000

x=400

1male=4x = 4*400=1600

Q4. read the information given below and answer the following question

f(a, b ,c) = abc

g(a,b,c) = a + b + c

h(a,b,c)a^2 + b^2 + c^2

Find the value of f(5, 3,6) + g(3,2,7) -h(2,3,4)

a. 73

b. 63

c. 102

d. 83

Solution

f(a,b,c) = a*b*c = 5*3*6 = 90

g(a,b,c) = a+ b + c = 3 + 2 + 7 = 12

h(a,b,c) = a^2 + b^2 + c^2 = 4 + 9 + 16 = 29

= 90 + 12 – 29

= 73

Correct option is a

Q5. For what minimum integer value of x, the expression (3^x)/243 will be greater than 1 ?

a. 3

b. 4

c. 5

d. 6

Solution

1 < (3^x)/243

243 = 3^5

So 3^x should be greater than 3^5

Hence x = 6.

Correct option is 'd'

Q6: read the information given below and answer the question as follows

F(X) = x^3 - 3

g(X) = 1/x - x

What is the value of f/g If x = 3

a. 9

b. -9

c. 3

d. -3

Solution

f(x) = 3^3 – 3 = 24

f(g) = 1/3 – 3 = -8 / 3

24 * 3 / - 8 = -9

correct option is b,

Ratio and Proportion

Q.1 The ratio of number of boys to the number of girls in a school of 1,200 students is 7:5. If 20 boys are newly admitted to the school , find how many girls may be admitted so that above ratio may change to 4:3.

Ops: A. 80

B. 140

C. 40

D. 60

Correct option is C

Solution:-

Ratio of boys to girls is 7:5

Let the number of boys and girls be 7x and 5x respectively

then 7x+5x=1200

x=100 which concludes there are 700 and 500 boys and girls

Now if 20 boys are admitted then no of boys=720

so for ratio of boys and girls to be 4:3

Let y be the no of girls to be admitted

720l/500+y = 4/3

720*3 = 4(500+y)

y=40

Q.2 The ratio of incomes of two friends is 3:5. In the next month their incomes are increased by Rs. 300 and Rs. 400 respectively? What is the new ratio of their incomes, if the difference in their incomes after increment is Rs. 500?

Ops. A. 1 : 4

B. 4 : 5

C. 9 : 14

D. 2 : 3

Correct option is C

Solutions:-

5x+400-3x-300=500

2x+100=500

x=200

(3x+300)/(5x+400)

=9:14

Q 3. On a Train journey, there are five kinds of tickets AC I, AC II, AC III, 3-tier, and general the relationship between the rates of the ticket are AC II is 20% higher than AC III, while AC I is 70% of AC III ticket's value higher than the AC II ticket value. The 3-tier ticket is 25% of the AC I's ticket cost and the general ticket is 1/3 the price of the AC 2 ticket.

The AC 2 ticket cost 780 euros between London and Paris the difference in the rate of the 3 tire and general ticket between the same two stations is

a. 41.25 Euros

b. 55.8 Euros

c. 48.75 Euros

d. 52.75 Euros

Solution

AC II = 1.2 * AC III

AC I = AC II + 70% of AC III

AC I = 1.2 * AC III + 0.7 * AC III

3-tier = 0.25 * 1.9 AC III

General = 1/3 of AC II = 260

1.2 AC III = 780

AC III = 650

3-tier = 0.25* 1.9 *650 = 308.75

Difference = 308.75 – 260 = 48.75 Euros

Correct option is 'c'

Q4. Jennifer and Adam have a number of sweets in the ratio of 3:5 if each of them eats 9 of their respective sweets, then the new ratio of sweets with them is 12:23 the number of sweets with adam, initially, was:

a. 27

b. 49

c. 55

d. 33

Solution

Let x = the multiplier

then

3x = one number

5x = the other number

"If each is decreased by 9, the ratio between the new numbers so formed is 12:23."

(3x – 9) / (5x - 9) = 12 / 23

Cross multiply

69x - 207 = 60x -108

9x = 99

X = 11

Adam = 5x = 55

correct option is c

Average

Q.1 Determine the average of the following data.

127,63,81,44,95

Ops: A. 66

B. 75

C. 74

D. 82

Correct option is D

Solution:

127+63+81+44+95=410

Average=410/5

total average=82

Q2. A dealer sold two type of car last year X and Y. The revenue from the sale of each unit of car X is 27 lacs, and that from the sale of each unit of car Y is rupees 51 lacs. If Dealer sold thrice as many units of car Y as car X, then what were the dealers average revenue per unit sold of this two cars last year?

a. Rupees 32 lacs

b. Rupees 41.6 lacs

c. Rupees 31 lacs

d. Rupees 45 lacs

Solution: 45 lacs

x is number of cars sold of X type

Average revenue = (3*x*(51) + x*(27)) / 4*x

= 45 lacs.

Correct option is 'd'

Percentage

Q.1 The daily wages of paul, sam and peter are in the ratio of 2:3:4, If their salaries are increased by 20%,30% and 15% respectively then sam's salary will be increased by Rs.120. What was the salary of paul initially ?

Ops. A. Rs. 200

B. Rs. 400

C. Rs. 400/3

D. Rs. 800/3

Correct option is D

Solutions:-

Let the salaries be 2x,3x,4x.

so 30% of 3x=120

so x=400/3

so for paul 2x=2*400/3=800/3

Q2. If the price of the fruit is decreased by 25% one can purchase 4 fruits more for $60 find the total number of fruits that one can purchase after the decrease in price.

a. 12

b. 20

c. 10

d. 16

Solution

Let x = original price

Let y = number of fruits

60 = x*y

After decrement => 60 = 0.75*x*(y + 4)

= 5 rs

So y = 12

= y + 4 = 16

Correct option is 'd'

Speed, Distance and Time

Q.1 A cheetah travels at speed of 240 kmph.It covers a distance of 4 km in

Ops. A. 1 minute

B. 3 minute

C. 2 minute

D. 4 minute

Correct option is A

Solutions:-

4/240=1/60=1 minute

Q.2 Two trains running at "x" meters per second and "y" meters per second cross the same tunnel in "a" seconds and "b" respectively.If the difference of lengths in train is "m" meters, then which of the following relations is correct ?

Ops. A. m= xa - yb

B. m/(xa)=yb+1

C. m=xa+yb

D. 1/m=1/(xa) + 1/(yb)

Correct option is A

Solutions:-

T1's length = xa

T2's length = yb

m is the difference between T1 and T2

m=xa-yb

Q.3 International Express running at (8/9)th of its usual speed reached its destination Yarker in 54 hours.How much time could be saved if the train would have run at its original speed ?

Ops. A. 6 hours

B. 7 hours

C. 4 hours

D. 8 hours

Correct option is A

Solutions:-

Let x be the original speed of train and y be the time taken then,

xy=(8x/9)*54

y=48

54-48=6 hours

Q.4 Gary bought five cars with an investment of Rs.5,00,000 and started renting them. Fuel charges are Rs.50 per kilometer and he pays Rs.5000 as a salary to each driver of a the car.If the average run of each car in a month is 200 km, how much should be charged per kilometer to get his investment back in 15 years

Ops. A. 75.25

B. 70.56

C. 77.78

D. 72.48

Correct option is C

Solutions:-

total amount spent in 15 years = 5,00,000+15*12(3*(200*50+5000))=14,000,000

Now divided into 5 cars for 1 car the amount is =14,000,000/5=2,800,000

Now converting the amount for 1 month = (2,800,000)/15*12=15,555.556

Now per km price is equal to=15,555.556/200=77.78

Q.5 A cheetah runs at a speed of 126 kmph. It covers a distance of 350m in:

Ops. A. 15 seconds

B. 5 seconds

C. 20 seconds

D. 10 seconds

Correct option is A

Solutions:-

(350 x 60 x 60)/126 x 1000=15 seconds

Q6. A car travels from town A To Town B at a speed of 60 km and return at a speed of 40 km per hour find the average speed for the journey

a. 45 km

b. 50 km

c. 53 km

d. 48 km

Solution

Formula for average speed = 2*(a*b) / (a + b).

= 2*(60*40)/(60+40)

= 48km.

Correct option is d

Q7. Two trains running at X meter per second and Y meters per second cross the same tunnel in 'a' seconds and 'b' metres' seconds respectively if the difference of the length of the train is 'm' meters, in which of the following relation is correct

a. 1/m = 1(xa) + 1/(yb)

b. m = xa -yb

c. m = xa +yb

d. m = xa * yb

Solution

Distance = speed * time

Difference = Distance of A train – Distance of B train

So m = xa – yb.

Correct option is 'b'

Q8. Ramesh crosses 600 metre long street in 55 minutes. What is his speed in km per hour?

a. 8.2

b. 4.2

c. 6.1

d. 7.2

Solution

Distance = 600 metre = 0.6 km

Time =5 minutes = 1/12 hour

Speed = distance / time = 0.6/(1/12) = 7.2 km/hr

correct option is d,

Q9. A man's speed with the current is 15 km/hr and the speed of the current is 2.5 km/hr. The man's speed against the current is:

a. 8.5 km/hr

b. 10 km/hr

c. 12.5 km/hr

d. 9 km/hr

Solution

Man's speed with the current = 15 km/hr

=> speed of the man + speed of the current = 15 km/hr

speed of the current is 2.5 km/hr

Hence, speed of the man = 15 - 2.5 = 12.5 km/hr

man's speed against the current = speed of the man - speed of the current

= 12.5 - 2.5 = 10 km/hr

correct option is b,

Q10. The speed of river stream is 2 kilometre per hour a person takes 3 times the time to go upstream as it takes to row downstream. find the speed of the boat in still water.

a. 8 kmph

b. 10 kmph

c. 4 kmph

d. 28 kmph

Solution

Let the speed of the boat in still water be x km/hr.

speed in upstream = x - 2 km/hr

and , speed in downstream = x + 2 km/hr.

given => x+2 = 3(x-2)

=> 2x = 8

=> x = 4 km/hr.... (Ans.)

correct option is c

Q11. International Express running at (8/9)th of its usual speed reach its destination yarker in 54 hours. How much time could be saved if the train could have run at its original speed?

a. 4 hours

b. 7 hours

c. 6 hours

d. 8 hours

Solution

The train ran at less than its full speed, which means it ran at a fraction of its full speed. That fraction is 8/9, which translates into a decimal of 0.88.

These facts mean that at full speed the train would have reached its destination in less than 54 hours.

Let t = time at full speed

then t = 0.88 x 54 hours

then t = 48 hours

time saved = 54 hours - 48 hours = 6 hours

correct option is c

Profit and Loss

Q.1 Aman purchased 10 cats for Rs.5,000 each. 1 cat died and he sold 2 cats at 5% loss.At what rate he should sell the remaining cats so as to earn a profit of 10% on total cost?

Ops: A. Rs. 6,500

B. Rs. 5,000

C. Rs. 6,000

D. Rs. 5,500

Correct option is C

Solution:-

CP of 10 cats =50,000

total loss from 1 cat died and 2 cat sold at 5% loss=5000+250+250

CP-loss=44,500

To earn a profit of 10% on 50,000 total profit is equal to =50,500

The total profit required to sell remaining cats is equal to =50500-44500=6,000

Q.2 If the price of a fruit is decreased by 25%,one can purchase 4 fruits more for $60.Determine the no of fruits purchased due to decrease in price ?

Ops. A. 12

B. 20

C. 16

D. 10

Correct option is C

Solutions:-

Let the price of a fruit be x,no of units purchased be y

before decrease in price

x*y=60

25% decrease in price is equal to 3x/4

(3x/4)*(y+4)=60

3xy+12x = 240

180+12x=240

x=5

so total no of fruits purchased after decrease in price is equal to 16

Q3. The cost price of 20 articles is the same as the selling price of x articles. If the profit is 25%, find the value of x

a. 15

b. 25

c. 18

d. 16

Solution

25 = (20−x)100 / x

$\Rightarrow x = 4(20-x)$

$\Rightarrow 5x = 80$

$\Rightarrow x = 16$

correct option is d

Progression

Q1. For the A.P., G.P., and H.P. which sequence is correct

A. AP=2, GP=4, HP=8

B. AP=4, GP=2, HP=8

C. AP=8, GP=4, HP=2

D. AP=4, GP=8, HP=2

Correct Op: D

Explanation : According to the relationship between A.P., G.P., and H.P.

A.P.= a, a1,a2

G.P. = a,ar^2,ar^3..

H.P.= 1/a,1/a1,...

On the basis of the interrelation of the formulas, D is correct.

Q2. What is the harmonic mean of 1,1/2, 1/3...1/n?

A. (n+1)/2

B. 2/(n+1)

C. (n+1)n/2

D. 2/(n(n+1))

E. n

Correct Op: B

Solution:

The harmonic mean of a set of numbers is determined by taking the reciprocals and calculating their mean.

Now, for 1,1/2,1/3,...,1/n

the reciprocals are 1,2,3,...,n

their mean is $\frac{1}{n}(1+2+3+...+n)=\frac{n+1}{2}$

whose reciprocal is $\frac{2}{n+1}$ which is the required harmonic mean.

Mixture and Allegation

Q1. From a flask containing water, 8 liters is taken out. It is replaced with an equal quantity of pure milk. This process is performed twice. The ratio of water to milk in the flask now is 9:40. What is the volume of the flask?

a. 21 litres

b. 22 litres

c. 20 litres

d. 14 litres

Solution

Let the capacity of the vessel be x.

After the first removal there would be x−8 liters of water left in the vessel. Note that the share of the water would be x−8/x;

After the second removal, the removed mixture of 8 liters will contain 8∗(x−8)/x liters of water, so there will be (x−8) – 8 ∗ (x−8) / x = (x−8)^2 / x liters of water left.

As the ratio of water to milk after that is 9 / 40, then the ratio of water to the capacity of the vessel would be 9 / 40+9 = 9 / 49.

So ((x−8)^2 / x) / x = 9 / 49 --> ((x−8)^2) / x^2 = 9 / 49 --> (x−8) / x = 3 / 7 --> x=14.

correct otion is d

Part 2

Ques 1 : Choose the correct answer.

If the sum of two numbers is 55 and the H.C.F. and L.C.M of these numbers are 5 and 120 respectively, then the sum of the reciprocals of the numbers is equal to:

Option 1 : 55/601
Option 2 : 601/55
Option 3 : 11/120
Option 4 : 120/11

Correct Answer :11/120

Ques 2 : Choose the correct answer.

Three different containers contain 496 litres, 403 litres and 713 litres of mixtures of milk and water respectively. What biggest measure can measure all the different quantities exactly ?

Option 1 : 1 litre
Option 2 : 7 litre
Option 3 : 31 litre

Option 4 : 41 litre

Correct Answer :31 Liters

Ques 3 : Choose the correct answer.
Six bells commence tolling together and toll at intervals of 2, 4, 6, 8, 10 and 12 seconds respectively. In 30 minutes, how many times do they toll together ?

Option 1 : 4
Option 2 : 10
Option 3 : 15
Option 4 : 16

Correct Answer : 16

Ques 4 : Choose the correct answer.
Four different electronic devices make a beep after every 30 minutes, 1 hour, 3/2 hour and 1 hour 45 minutes respectively. All the devices beeped together at 12 noon. They will again beep together at:

Option 1 : 12 midnight
Option 2 : 3 a.m.
Option 3 : 6 a.m.
Option 4 : 9 a.m.

Correct Answer : 9am

Ques 5 : Choose the correct answer.
The number of prime factors of (3 x 5)12 (2 x 7)10 (10)25 is:

Option 1 : 47
Option 2 : 60
Option 3 : 72
Option 4 : None of these

Correct Answer : None Of These

Ques 6 : Choose the correct answer.
What least value must be assigned to * so that the number 63576*2 is divisible by 8?

Option 1 : 1
Option 2 : 2
Option 3 : 3
Option 4 : 4

Correct Answer :3

Ques 7 : Choose the correct answer.
Which of the following numbers is exactly divisible by 24 ?

Option 1 : 35718
Option 2 : 63810
Option 3 : 537804
Option 4 : 3125736

Correct Answer :3125736

Ques 8 : Choose the correct answer.
The number nearest to 15207, which is divisible by 467, is:

Option 1 : 14342
Option 2 : 15211
Option 3 : 14944
Option 4 : 15411
Option 5 : None of these

Correct Answer :15411

Ques 9 : Choose the correct answer.
The smallest number, which is a perfect square and contains 7936 as a factor is:

Option 1 : 251664
Option 2 : 231564
Option 3 : 246016
Option 4 : 346016
Option 5 : None of these

Correct Answer :246016

Ques 10 : Choose the correct answer.
In a division problem, the divisor is twenty times the quotient and five times the remainder. If remainder is 16, the number will be:

Option 1 : 3360
Option 2 : 336
Option 3 : 1616
Option 4 : 20516
Option 5 : None of these

Correct Answer :336

Ques 11 : Choose the correct answer.
The L.C.M. of two numbers is 4800 and their G.C.M. is 160. If one of the numbers is 480, then the other number is:
Option 1 : 1600
Option 2 : 1800
Option 3 : 2200
Option 4 : 2600
Option 5 : None of these

Ques 12 : Choose the correct answer.
The L.C.M. of two numbers is 140. If their ratio is 2:5, then the numbers are:

Option 1 : 28,70
Option 2 : 28,7
Option 3 : 8,70
Option 4 : 8,40
Option 5 : None of these

Ques 13 : Choose the correct answer.
If a number is exactly divisible by 85, then what will be the remainder when the same number is divided by 17?

Option 1 : 3
Option 2 : 1
Option 3 : 4
Option 4 : 0

Ques 14 : Choose the correct answer.
The least perfect square number which is exactly divisible by 3, 4, 7, 10 and 12 is:

Option 1 : 8100
Option 2 : 17600
Option 3 : 44100
Option 4 : None of these

Ques 15 : Choose the correct answer.
(xn+yn) is divisible by (x-y):

Option 1 : for all values of n
Option 2 : only for even values of n
Option 3 : only for odd values of n
Option 4 : for no values of n

Ques 16 : Choose the correct answer.
The greatest number that will divide 63, 138 and 228 so as to leave the same remainder in each case:

Option 1 : 15
Option 2 : 20
Option 3 : 35
Option 4 : 40

Ques 17 : Choose the correct answer.
Find the largest number, smaller than the smallest four-digit number, which when divided by 4,5,6 and 7 leaves a remainder 2 in each case.
Option 1 : 422
Option 2 : 842
Option 3 : 12723
Option 4 : None of these

Ques 18 : Choose the correct answer.
What is the highest power of 5 that divides 90 x 80 x 70 x 60 x 50 x 40 x 30 x 20 x 10?
Option 1 : 10
Option 2 : 12
Option 3 : 14
Option 4 : None of these

Ques 19 : Choose the correct answer.
If a and b are natural numbers and a-b is divisible by 3, then a3-b3 is divisible by:
Option 1 : 3 but not by 9
Option 2 : 9
Option 3 : 6
Option 4 : 27

Ques 20 : Choose the correct answer.
What is the greatest positive power of 5 that divides 30! exactly?
Option 1 : 5
Option 2 : 6
Option 3 : 7
Option 4 : 8

Ques 21 : Choose the correct answer.
In how many ways can a number 6084 be written as a product of two different factors ?
Option 1 : 27
Option 2 : 26
Option 3 : 13
Option 4 : 14

Ques 22 : Choose the correct answer.
What is the smallest four-digit number which when divided by 6, leaves a remainder of 5 and when divided by 5 leaves a remainder of 3?
Option 1 : 1043
Option 2 : 1073

Option 3 : 1103
Option 4 : None of these

Ques 23 : Choose the correct answer.
P is an integer. P>883. If P-7 is a multiple of 11, then the largest number that will always divide (P+4) (P+15) is:
Option 1 : 11
Option 2 : 121
Option 3 : 242
Option 4 : None of these

Ques 24 : Choose the correct answer.
Let C be a positive integer such that C + 7 is divisible by 5. The smallest positive integer n (>2) such that C + n2 is divisible by 5 is:
Option 1 : 4
Option 2 : 5
Option 3 : 3
Option 4 : Does not exist

Ques 25 : Choose the correct answer.
Four bells begin to toll together and then each one at intervals of 6 s, 7 s, 8 s and 9 s respectively. The number of times they will toll together in the next 2 hr is:
Option 1 : 14 times
Option 2 : 15 times
Option 3 : 13 times
Option 4 : 11 times

Ques 26 : Choose the correct answer.
The product of two numbers is 16200. If their LCM is 216, find their HCF.
Option 1 : 75
Option 2 : 70
Option 3 : 80
Option 4 : Data inconsistent

Ques 27 : Choose the correct answer.
There are four prime numbers written in ascending order of magnitude. The product of first three is 385 and that of last three is 1001. Find the first number.
Option 1 : 5
Option 2 : 7
Option 3 : 11
Option 4 : 17

Ques 28 : Choose the correct answer.
M and N are two distinct natural numbers. HCF and LCM of M and N are K and L respectively. A is also a natural number, which of the following relations is not possible?
Option 1 : K*L=A

Option 2 : K*A=L
Option 3 : L*A=K
Option 4 : None of these

Ques 29 : Choose the correct answer.
On dividing a number by 999,the quotient is 366 and the remainder is 103.The number is:
Option 1 : 364724
Option 2 : 365387
Option 3 : 365737
Option 4 : 366757

Ques 30 : Choose the correct answer.
The difference between two numbers is 1365.When the larger number is divided by the smaller one ,the quotient is 6 and the remainder is 15.The smaller number is:
Option 1 : 240
Option 2 : 270
Option 3 : 295
Option 4 : 360

Ques 31 : Choose the correct answer.
The ratio of two numbers is 3:4 and their HCF is 4.Their LCM is:
Option 1 : 12 Option 2 : 16 Option 3 : 24 **Option 4 : 48**

Ques 32 : Choose the correct answer.
A rectangular courtyard 3.78 meters long and 5.25 meters wide is to be paved exactly with square tiles ,all of the same size. What is the largest size of the tile which could be used for the purpose?
Option 1 : 14 cm **Option 2 : 21 cm** Option 3 : 42 cm Option 4 : None of these

Ques 33 : Choose the correct answer.
The least perfect square which is divisible by 3, 4, 5, 6, 8 is:
Option 1 : 900 Option 2 : 1200 Option 3 : 2500 **Option 4 : 3600**

Ques 34 : Choose the correct answer.
What will be obtained if 8 is subtracted from the HCF of 168, 189, and 231?
Option 1 : 15 Option 2 : 10 Option 3 : 21 **Option 4 : None of these**

Ques 35 : Choose the correct answer.
The largest four digit number which is a multiple of 8, 10,12 and 15 is:
Option 1 : 120 Option 2 : 9600 Option 3 : 9840 **Option 4 : 9960**

Ques 36 : Choose the correct answer.
If logx (0.1) = -1/3, then the value of x is:
Option 1 : 10 Option 2 : 100 **Option 3 : 1000** Option 4 : 1/1000

Ques 37 : Choose the correct answer.
If ax = by, then:

Option 1 : log(a/b) = x/y Option 2 : log(a) / log(b) = x/y **Option 3 : log(a) / log(b) = y/x** Option 4 : None of these

Ques 38 : Choose the correct answer.
If log8 x + log8 (1/6) = 1/3 then the value of x is:
Option 1 : 12 Option 2 : 16 Option 3 : 18 Option 4 : 24

Ques 39 : Choose the correct answer.
If log x + log y = log (x + y), then:
Option 1 : x = y Option 2 : xy=1 Option 3 : y = (x-1)/x **Option 4 : y = x/(x-1)**

Ques 40 : Choose the correct answer.
If log10 7 = a, then log10(1/70) is equal to:
Option 1 : -(1 + a) Option 2 : (1 + a)-1 Option 3 : a/10 Option 4 : 1/10a

Ques 41 : Choose the correct answer.
If log{(a+b)/3} = 0.5(log a + log b), then the correct relation between a and b is:
Option 1 : a2+b2 = 7ab Option 2 : a2-b2 = 7ab Option 3 : (a+b)2 = 2 Option 4 : (a+b)/3 = (1/2)(a+b)
Option 5 : None of these

Ques 42 : Choose the correct answer.
If log x = log 3 + 2 log 2- (3/4) log 16. The value of x is:
Option 1 : 1/2 Option 2 : 1 **Option 3 : 3/2** Option 4 : 2 Option 5 : None of these

Ques 43 : Choose the correct answer.
If log x =(1/2) log y = (1/5) log z, the value of x4y3z-2 is:
Option 1 : 0 **Option 2 : 1** Option 3 : 2 Option 4 : 3 Option 5 : None of these

Ques 44 : Choose the correct answer.
If log10000 x = -1/4, then x is given by:
Option 1 : 1/100 **Option 2 : 1/10** Option 3 : 1/20 Option 4 : none of these

Ques 45 : Choose the correct answer.
The value of 3-1/2 log3(9) is:
Option 1 : 3 **Option 2 : 1/3** Option 3 : 2/3 Option 4 : none of these

Ques 46 : Choose the correct answer.
loge xy - loge |x| equals to:
Option 1 : loge x Option 2 : loge |x| Option 3 : - loge x **Option 4 : none of these**

Ques 47 : Choose the correct answer.
The value of (loga n) / (logab n) is given by:
Option 1 : 1 + loga b Option 2 : 1 + logb a Option 3 : loga b Option 4 : logb a

Ques 48 : Choose the correct answer.
If (a4 - 2a2b2 + b4)x-1 = (a-b)2x (a+b)-2, then x equals to:

Option 1 : (a - b) / (a + b) Option 2 : log (a2 - b2) Option 3 : log (a + b) / log (a - b) **Option 4 : log (a - b) / log (a + b)**

Ques 49 : Choose the correct answer.
If a, b, and c are in geometric progression then loga n, logb n and logc n are in:
Option 1 : AP Option 2 : GP **Option 3 : HP** Option 4 : None of these

Ques 50 : Choose the correct answer.
What is the value of antilog10100?
Option 1 : 2 **Option 2 : 10100** Option 3 : 100 Option 4 : 10

Ques 51 : Choose the correct answer.
If antilog x 5 = 30, what can you infer about x?
Option 1 : x is a number between 1 and 2 Option 2 : x is 305 Option 3 : x is a number between 2 and 3
Option 4 : None of these

Ques 52 : Choose the correct answer.
Every time x is increased by a given constant number, y doubles and z becomes three times. How will log(y) and log(z) behave as x is increased by the same constant number?
Option 1 : Both will grow linearly with different slopes Option 2 : Both will grow linearly with same slopes Option 3 : y will grow linearly, while z will not Option 4 : z will grow linearly, while y will not

Ques 53 : Choose the correct answer.
x triples every second. How will log2x change every second?
Option 1 : It will double every second Option 2 : It will triple every second **Option 3 : It increases by a constant amount every second.** Option 4 : None of these

Ques 54 : Choose the correct answer.
f(x) grows exponentially with x, how will f(log(x)) grow?
Option 1 : Exponentially **Option 2 : Linearly** Option 3 : Quadratically Option 4 : None of these

Ques 55 : Choose the correct answer.
What is the value of log512 8?
Option 1 : 3 **Option 2 : 1/3** Option 3 : -3 Option 4 : -1/3

Ques 56 : Choose the correct answer.
What is the value of log7 (1/49)?
Option 1 : 2 Option 2 : 1/2 Option 3 : -1/2 **Option 4 : -2**

Ques 57 : Choose the correct answer.
Given that log64 x = 2/6, what is the value of x?
Option 1 : 2 **Option 2 : 4** Option 3 : 6 Option 4 : 8

Ques 58 : Choose the correct answer.

If 7x = 85, what is the value of x?
Option 1 : log785 Option 2 : log857 Option 3 : log107 Option 4 : log1085

Ques 59 : Choose the correct answer.
If log102 = 0.3010, what is the number of digits in 264
Option 1 : 19 **Option 2 : 20** Option 3 : 18 Option 4 : None of these

Ques 60 : Choose the correct answer.
What is log110?
Option 1 : 1 Option 2 : 10 Option 3 : 0 **Option 4 : Tends to infinity**

Ques 61 : Choose the correct answer.
What is log100 ?
Option 1 : 0 Option 2 : 10 Option 3 : 1 **Option 4 : Not defined**

Ques 62 : Choose the correct answer.
What is the value of log3 (-9)?
Option 1 : 3 Option 2 : 1/3 Option 3 : -3 **Option 4 : Not defined**

Ques 63 : Choose the correct answer.
Rajeev multiplies a number by 10, the log (to base 10) of this number will change in what way?
Option 1 : Increase by 10 **Option 2 : Increase by 1** Option 3 : Multiplied by 10 Option 4 : None of these

Ques 64 : Choose the correct answer.
The logarithm of a very small positive number will tend to which of the following?
Option 1 : 0 **Option 2 : negative infinity** Option 3 : positive infinity Option 4 : 1

Ques 65 : Choose the correct answer.
If n numbers are in geometric progression, the logarithm of the number will be in which of the following?
Option 1 : Geometric Progression **Option 2 : Arithmetic Progression** Option 3 : Harmonic Progression
Option 4 : None of these

Ques 66 : Choose the correct answer.
Which of the following is equivalent to log(a + b) ?
Option 1 : log a + log b Option 2 : log a * log b Option 3 : log a - log b **Option 4 : None of these**

Ques 67 : Choose the correct answer.
What is the value of log3 (1/9) + log 9 81 ?
Option 1 : 2 Option 2 : -2 **Option 3 : 0** Option 4 : 4

Ques 68 : Choose the correct answer.
What is the value of log3 1.5 + log3 6 ?
Option 1 : 2 Option 2 : 2.7 Option 3 : 1.8 Option 4 : None of these

Ques 69 : Choose the correct answer.
Which of the following is log8 x equivalent to?

Option 1 : log2 (x/3) Option 2 : log2 (3x) **Option 3 : (log2x)/ 3** Option 4 : None of these

Ques 70 : Choose the correct answer.
If n numbers are in arithmetic progression, the logarithm of the number will be in which of the following?
Option 1 : Exponentially Option 2 : Linearly Option 3 : Quadratically **Option 4 : None of these**

Ques 71 : Choose the correct answer.
What is the value of log20 1 ?
Option 1 : 0 Option 2 : 1 Option 3 : 20 Option 4 : None of these

Ques 72 : Choose the correct answer.
The unit's digit in the product (771 x 659 x 365) is
Option 1 : 1 Option 2 : 2 **Option 3 : 4** Option 4 : 6

Ques 73 : Choose the correct answer.
1.52 * 0.02251/2 = ?
Option 1 : 0.0375 **Option 2 : 0.3375** Option 3 : 3.275 Option 4 : 32.75

Ques 74 : Choose the correct answer.
If x1/2 / 4411/2 = 0.02, the value of x is:
Option 1 : 0.1764 Option 2 : 1.764 Option 3 : 1.64 Option 4 : 2.64

Ques 75 : Choose the correct answer.
The value of 21/2 upto three places of decimal is
Option 1 : 1.41 Option 2 : 1.412 Option 3 : 1.413 **Option 4 : 1.414**

Ques 76 : Choose the correct answer.
The value of (8-25- 8-26) is:
Option 1 : 7 x 8-25 **Option 2 : 7 x 8-26** Option 3 : 8 x 8-26 Option 4 : None of these

Ques 77 : Choose the correct answer.
If 22n-1 = (1 / 8n-3) then the value of n is:
Option 1 : 3 **Option 2 : 2** Option 3 : 0 Option 4 : -2

Ques 78 : Choose the correct answer.
If 2x = 3y = 6-z, then (1/x + 1/y + 1/z)
is equal to:
Option 1 : 0 Option 2 : 1 Option 3 : 3/2 Option 4 : -0.5

Ques 79 : Choose the correct answer.
What is the remainder when 1723 is divided by 16?
Option 1 : 0 **Option 2 : 1** Option 3 : 2 Option 4 : 3

Ques 80 : Choose the correct answer.
What will be the remainder when 1336 is divided by 2196?
Option 1 : 0 **Option 2 : 1** Option 3 : 12 Option 4 : 2195

Ques 81 : Choose the correct answer.
The roots of the equation 4x-3*2x+2+32=0 would include-
Option 1 : 2, 3 Option 2 : 1, 2, 3 Option 3 : 1, 2 Option 4 : 4, 8

Ques 82 : Choose the correct answer.
If ax =b, by=c and cz =a, then the value of xyz is:
Option 1 : 0 **Option 2 : 1** Option 3 : 2 Option 4 : 3

Ques 83 : Choose the correct answer.
If x = 1+21/2 and y=1-21/2, then x2+y2 is -
Option 1 : 2 Option 2 : 3 **Option 3 : 6** Option 4 : 0

Ques 84 : Choose the correct answer.
If 4x+3 = 2x+7, then the value of x is:
Option 1 : 3 Option 2 : 2 **Option 3 : 1** Option 4 : None of these

Ques 85 : Choose the correct answer.
2x+y = 2*(2)1/2 and 2x-y = 21/2,the value of x is:
Option 1 : 1 Option 2 : 2 Option 3 : 3 Option 4 : 4 Option 5 : None of these

Ques 86 : Choose the correct answer.
If x = 8, y = 27, the value of (x4/3+y2/3)1/2 is:
Option 1 : 5 Option 2 : 6 Option 3 : 7 Option 4 : 8 Option 5 : None of these

Ques 87 : Choose the correct answer.
If xy = yx and x = 2y, the value of y is:
Option 1 : 1 **Option 2 : 2** Option 3 : 3 Option 4 : 4 Option 5 : None of these

Ques 88 : Choose the correct answer.
If 2x * 3y = 18 and 22x * 3y= 36, the value of x is:
Option 1 : 0 **Option 2 : 1** Option 3 : 2 Option 4 : 3 Option 5 : None of these

Ques 89 : Choose the correct answer.
What is the value of 500 ?
Option 1 : 0 **Option 2 : 1** Option 3 : 50 Option 4 : None of these

Ques 90 : Choose the correct answer.
What is the value of 6-2 ?
Option 1 : 1/36 Option 2 : 36 Option 3 : -36 Option 4 : None of these

Ques 91 : Choose the correct answer.
What is the value of 0-10 ?
Option 1 : 0 Option 2 : 1 Option 3 : -10 **Option 4 : None of these**

Ques 92 : Choose the correct answer.

What is the value of 251.5 ?
Option 1 : 325 Option 2 : 32.5 **Option 3 : 125** Option 4 : None of these

Ques 93 : Choose the correct answer.
What is the value of (0.027)1/3?
Option 1 : 0.3 Option 2 : 0.03 Option 3 : 0.003 Option 4 : None of these

Ques 94 : Choose the correct answer.
What is the value of (0.016)1/4?
Option 1 : 0.2 Option 2 : 0.02 Option 3 : 0.002 **Option 4 : None of these**

Ques 95 : Choose the correct answer.
Walking 6/7th of his usual speed, a man is 12 minutes too late. The usual time taken by him to cover that distance is:
Option 1 : 1 hour **Option 2 : 1 hr 12min** Option 3 : 1 hr 15 min Option 4 : 1 hr 20 min

Ques 96 : Choose the correct answer.
A boat running upstream takes 8 hours 48 minutes to cover a certain distance, while it takes 4 hours to cover the same distance running downstream. What is the ratio between the speed of the boat and speed of the water current respectively ?
Option 1 : 2 : 1 Option 2 : 3 : 2 **Option 3 : 8 : 3** Option 4 : Cannot be determined Option 5 : None of these

Ques 97 : Choose the correct answer.
In a 100 m race, A can beat B by 25 m and B can beat C by 4 m. In the same race, A can beat C by:
Option 1 : 21 m Option 2 : 26 m **Option 3 : 28 m** Option 4 : 29 m

Ques 98 : Choose the correct answer.
In a family, the father took 1/5 of the cake and he had 4 times as much as others had, then the family members are:
Option 1 : 16 **Option 2 : 17** Option 3 : 18 Option 4 : None of these

Ques 99 : Choose the correct answer.
The price of sugar is increased by 25%. In order not to increase the expenditure a lady must reduce her consumption by:
Option 1 : 25% **Option 2 : 20%** Option 3 : 30% Option 4 : None of these

Ques 100 : Choose the correct answer.
I read 3/8 of a book on one day, and 4/5 of the remainder on another day. If now there were 30 pages unread, the book contains:
Option 1 : 240 pages Option 2 : 230 pages Option 3 : 340 pages Option 4 : 140 pages Option 5 : None of these

Ques 101 : Choose the correct answer.
In an examination, 70% of students passed in physics, 65% in chemistry, 27% failed in both subjects. The percentage of students who passed is:
Option 1 : 66% **Option 2 : 62%** Option 3 : 69% Option 4 : None of these

Ques 102 : Choose the correct answer.
An article was sold for Rs. 2770. Had it been sold for Rs. 3000 there would have been an additional gain of 10%. Cost Price of the article is:
Option 1 : Rs. 2100 Option 2 : Rs. 2200 **Option 3 : Rs. 2300** Option 4 : Rs. 2400 Option 5 : None of these

Ques 103 : Choose the correct answer.
Rakesh buys a scooter worth Rs. 10,000. He sells it to Mohan at a profit of 10%. If after sometime Mohan sells it back to Rakesh at a loss of 10%, then totally:
Option 1 : Rakesh loses Rs. 100 Option 2 : Rakesh loses Rs. 1100 Option 3 : Rakesh gains Rs. 100
Option 4 : Rakesh gains Rs. 1100 Option 5 : None of these

Ques 104 : Choose the correct answer.
The list price of an electric iron is Rs. 300. If two successive discounts of 15% and 10% are allowed, its selling price will be:
Option 1 : Rs. 229.50 Option 2 : Rs.231.50 Option 3 : Rs.232.50 Option 4 : Rs. 234.50 Option 5 : None of these

Ques 105 : Choose the correct answer.
The rate of compound interest at which a sum of Rs. 8000 amounts to Rs. 8820 in 2 years, is:
Option 1 : 5% Option 2 : 4% Option 3 : 6% Option 4 : 7% Option 5 : None of these

Ques 106 : Choose the correct answer.
A car is 250 metres behind the bus. The car and bus are moving with speed 60 km/hr and 35 km/hr respectively. The car will be ahead of bus by 250 metres in:
Option 1 : 37 seconds Option 2 : 48 seconds **Option 3 : 72 seconds** Option 4 : 68 seconds Option 5 : None of these

Ques 107 : Choose the correct answer.
Mohan walks a certain distance and rides back in 6 hours and 15 minutes. If he walks both ways he takes 7 hours and 45 minutes. If Mohan rides both ways the time which he will take will be:
Option 1 : 4 hours **Option 2 : 19/4** hours Option 3 : 9/2 hours Option 4 : 17/4 hours Option 5 : None of these

Ques 108 : Choose the correct answer.
Population of a village is eight thousand. If 6% men and 10% women are added, population becomes 8,600, then the number of men in the village was:
Option 1 : 4800 **Option 2 : 5000** Option 3 : 5060 Option 4 : 6000

Ques 109 : Choose the correct answer.
If 15 oxen or 20 cows can eat the grass of a field in 80 days, then in how many days will 6 oxen and 2 cows eat the same grass?
Option 1 : 40 Option 2 : 60 Option 3 : 100 **Option 4 : 160**

Ques 110 : Choose the correct answer.

At a certain party the ratio of gents and ladies was 1 : 2. But when 2 gents and 2 ladies left the party, the ratio became 1 : 3. How many people were initially present in the party?
Option 1 : 12 Option 2 : 15 Option 3 : 18 Option 4 : 24

Ques 111 : Choose the correct answer.
Prabodh bought 30 kg of rice at the rate of Rs. 8.50 per kg and 20 kg of rice at the rate of Rs. 9.00 per kg. He mixed the two. At what price (App.) per kg should he sell the mixture in order to get 20% profit?
Option 1 : Rs. 9.50 Option 2 : Rs. 8.50 **Option 3 : Rs. 10.50** Option 4 : Rs. 12.00

Ques 112 : Choose the correct answer.
The cash price of a television is Rs. 4022. A customer paid Rs. 1500 in cash and promised to pay the remaining money in 3 monthly equal instalments at the rate of 5% per annum compound interest. What is the value of each instalment?
Option 1 : Rs. 926.10 Option 2 : Rs. 903.33 Option 3 : Rs. 928.30 Option 4 : Rs. 940.50

Ques 113 : Choose the correct answer.
The population of a village decreases at the rate of 20% per annum. If its population 2 years ago was 10000, what is its present population?
Option 1 : 6000 Option 2 : 10000/144 **Option 3 : 6400** Option 4 : 7600

Ques 114 : Choose the correct answer.
A certain sum of money at simple interest becomes Rs. 1062 in 2 years and Rs. 1183.50 in 3½ years. What is rate of interest per annum?
Option 1 : 7% Option 2 : 6% **Option 3 : 9%** Option 4 : 5%

Ques 115 : Choose the correct answer.
If the simple interest on a sum at 4% per annum for 2 years is Rs. 80, then the compound interest on the same sum for the same period is:
Option 1 : Rs. 86.80 Option 2 : Rs. 86.10 Option 3 : Rs. 88.65 **Option 4 : Rs. 81.60**

Ques 116 : Choose the correct answer.
A man covers a distance of 1200 km in 70 days resting 9 hours a day, if he rests 10 hours a day and walks with speed 1½ times of the previous in how many days will he cover 750 km?
Option 1 : 30 **Option 2 : 31.25** Option 3 : 31 Option 4 : 33

Ques 117 : Choose the correct answer.
A train leaves Delhi at 6.00 a.m. and reaches Agra at 10.00 a.m. Another train leaves Agra at 8.00 a.m. and reaches Delhi at 11.30 a.m. At what time do the two trains cross each other if the distance between Delhi and Agra is 200 km?
Option 1 : 8.45 a.m. **Option 2 : 8.56 a.m.** Option 3 : 9.20 a.m. Option 4 : 9.56 a.m.

Ques 118 : Choose the correct answer.
How many litres of a 90% solution of concentrated acid needs to be mixed with a 75% solution of concentrated acid to get a 30 L solution of 78% concentrated acid?
Option 1 : 24 L Option 2 : 22.5 L **Option 3 : 6 L** Option 4 : 17.5 L

Ques 119 : Choose the correct answer.
If x is a positive number and y = x2, then which of the following is true?
Option 1 : y is always more than x Option 2 : x is always more than y Option 3 : x is always equal to y
Option 4 : None of these

Ques 120 : Choose the correct answer.
Rajiv has a number x in his mind. He finds out that the square of x is less than x. What is the range of x?
Option 1 : x is more than 0 Option 2 : x is less than 1 **Option 3 : x is more than 0, but less than 1**
Option 4 : This is not possible

Ques 121 : Choose the correct answer.
What is the value of: x1.5 * x2 ?
Option 1 : x3 **Option 2 : x3.5** Option 3 : x0.75 Option 4 : None of these

Ques 122 : Choose the correct answer.
What is the value of: (33*812*20)/95 ?
Option 1 : 0 **Option 2 : 3** Option 3 : 1/3 Option 4 : None of these

Ques 123 : Choose the correct answer.
What number should be divided by (0.81)1/2 to give the result as 81?
Option 1 : 9 Option 2 : 81 **Option 3 : 72.9** Option 4 : 0.9

Ques 124 : Choose the correct answer.
If 6(x-3) = 36(x-5), then what is the value of x?
Option 1 : 2 Option 2 : No value will agree Option 3 : -1 **Option 4 : 7**

Ques 125 : Choose the correct answer.
Which is the largest among 21/2, 51/3 and 41/4 ?
Option 1 : (2)1/2 **Option 2 : 51/3** Option 3 : 41/4 Option 4 : None of these

Ques 126 : Choose the correct answer.
What is the value of 10009/1004?
Option 1 : 1005 Option 2 : 105 **Option 3 : 1019** Option 4 : None of these

Ques 127 : Choose the correct answer.
In how many different ways can the letters of the word 'OPTICAL' be arranged so that the vowels always come together ?
Option 1 : 120 **Option 2 : 720** Option 3 : 4320 Option 4 : 2160 Option 5 : None of these

Ques 128 : Choose the correct answer.
In how many different ways can the letters of the word 'CORPORATION' be arranged so that the vowels always come together ?
Option 1 : 810 Option 2 : 1440 Option 3 : 2880 **Option 4 : 50400** Option 5 : 5760

Ques 129 : Choose the correct answer.

How many 3 digit numbers can be formed from the digits 2, 3, 5, 6, 7 and 9, which are divisible by 5 and none of the digits is repeated ?
Option 1 : 5 Option 2 : 10 Option 3 : 15 **Option 4 : 20**

Ques 130 : Choose the correct answer.
A committee is to be formed comprising 7 members such that there is a simple majority of men and at least 1 women. The shortlist consists of 9 men and 6 women. In how many ways can this be done?
Option 1 : 3,724 Option 2 : 3,630 **Option 3 : 4,914** Option 4 : 5,670

Ques 131 : Choose the correct answer.
From a pack of 52 playing cards, 4 cards are removed at random. In how many ways can the 1st place and 3rd place cards be drawn out such that both are black ?
Option 1 : 64,974 Option 2 : 62,252 Option 3 : 69,447 **Option 4 : 1,592,500**

Ques 132 : Choose the correct answer.
In how many ways can the digits 2,3,5,7 and 9 be placed to form a three-digit number so that the higher order digit is always greater than the lower order digits? (Assume digits are all different).
Option 1 : 8 Option 2 : 9 **Option 3 : 10** Option 4 : 15

Ques 133 : Choose the correct answer.
In how many ways can 4 ladies and 4 men form two mixed doubles teams for a tennis match?
Option 1 : 72 Option 2 : 108 Option 3 : 36 Option 4 : 84

Ques 134 : Choose the correct answer.
In CAT entrance examination paper there are 3 sections, each containing 5 questions. A candidate has to solve 5, choosing at least one from each section. The number of ways he can choose is
Option 1 : 2,500 **Option 2 : 2,250** Option 3 : 2,750 Option 4 : 3,250

Ques 135 : Choose the correct answer.
A boy has 4 different boxes and 5 different marbles. In how many ways can he place the marbles in the boxes such that each box has at least one marble ?
Option 1 : 560 **Option 2 : 240** Option 3 : 420 Option 4 : 36

Ques 136 : Choose the correct answer.
A teacher was trying to form the groups of students in such a way that every group has equal number of students and that number should be a prime number. She tried for first 5 prime numbers, but on each occasion exactly one student was left behind. If t
Option 1 : 0 Option 2 : 2 Option 3 : 3 **Option 4 : 4**

Ques 137 : Choose the correct answer.
Ram buys 7 novels from a book fair. Shyam buys 8 novels from the fair, none of which is common with those bought by Ram. They decide to exchange their books one for one. In how many ways can they exchange their books for the first time ?
Option 1 : 7!x8! Option 2 : 7x8! Option 3 : 7!x8 **Option 4 : 56**

Ques 138 : Choose the correct answer.

In an examination 10 questions are to be answered choosing at least 4 from each of part A and part B. If there are 6 questions in part A and 7 in part B, in how many ways can 10 questions be answered ?
Option 1 : 212 **Option 2 : 266** Option 3 : 272 Option 4 : 312

Ques 139 : Choose the correct answer.
A box contains 20 tickets of identical appearance, the tickets being numbered 1, 2, 3, ….., 20. In how many ways can 3 tickets be chosen such that the numbers on the drawn tickets are in arithmetic progression ?
Option 1 : 18 Option 2 : 33 Option 3 : 56 **Option 4 : 90**

Ques 140 : Choose the correct answer.
A company could advertise about its new product in 4 magazines, 3 newspapers and 2 television channels. But in a later move it decided to give advertisements in only 2 of the magazines, one of the newspapers and one the TV channels. In how many ways can
Option 1 : 30 **Option 2 : 36** Option 3 : 44 Option 4 : None of these

Ques 141 : Choose the correct answer.
In how many ways can the letters of the word 'ERGONOMICS' be rearranged such that the vowels always appear together?
Option 1 : 6! /2! Option 2 : 6!*4! Option 3 : 7! /2! **Option 4 : (7! * 4!)/2!**

Ques 142 : Choose the correct answer.
How many different four letter words can be formed (the words need not be meaningful) using the letters of the word PACIFIC such that the first letter is P and the last letter is F?
Option 1 : 8 Option 2 : 3 Option 3 : 6 Option 4 : 7!/5!

Ques 143 : Choose the correct answer.
The value of 74P2 is
Option 1 : 2775 Option 2 : 150 **Option 3 : 5402** Option 4 : none of these

Ques 144 : Choose the correct answer.
In how many different ways can the letters of the word ' HARDWARE' be arranged in such a way that the vowels always come together.
Option 1 : 120 **Option 2 : 1080** Option 3 : 1440 Option 4 : 4320 Option 5 : 720

Ques 145 : Choose the correct answer.
In how many ways a committee, consisting of 4 men and 10 women can be formed from 6 men and 10 women?
Option 1 : 266 Option 2 : 50 **Option 3 : 15** Option 4 : 8640 Option 5 : none of these

Ques 146 : Choose the correct answer.

Out of 7 consonants and four vowels ,how many words of three consonants and 2 vowels can be formed?
Option 1 : 210 Option 2 : 1050 **Option 3 : 25200** Option 4 : 21400 Option 5 : none of these

Ques 147 : Choose the correct answer.
3 books of mathematics and 5 books of physics are placed on a shelf so that the books on the same subject always remain together .The possible arrangements are .
Option 1 : 1440 Option 2 : 1956 Option 3 : 720 Option 4 : none of these

Ques 148 : Choose the correct answer.
The number of possible selections of one or more questions from 8 given questions, each question having an alternative, is
Option 1 : 28-1 **Option 2 : 38-1** Option 3 : 48-1 Option 4 : none of these

Ques 149 : Choose the correct answer.
A five -digit number divisible by 3 is to be formed using numerals 0,1,2,3,4 and 5 without repetition. The total number of ways this can be done is
Option 1 : 216 Option 2 : 240 Option 3 : 600 Option 4 : 3125

Ques 150 : Choose the correct answer.
Let A be containing 10 distinct elements ,then the total number of distinct functions from A to A IS
Option 1 : 10! **Option 2 : 1010** Option 3 : 210 Option 4 : 210-1

Ques 151 : Choose the correct answer.
A polygon has 44 diagonals, the number of its sides is
Option 1 : 10
Option 2 : 11
Option 3 : 12
Option 4 : 22

Ques 152 : Choose the correct answer.
The number of triangles that can be formed by choosing the vertices from a set of 12 points, seven of which lie on the same straight line is
Option 1 : 105
Option 2 : 115
Option 3 : 175
Option 4 : 185

Ques 153 : Choose the correct answer.
There are 5 letters and five addressed envelopes. the number of ways in which all the letters can be put in wrong envelopes is
Option 1 : 119
Option 2 : 44

Option 3 : 59
Option 4 : 40

Ques 154 : Choose the correct answer.
The number of ways in which 8 different flowers can be strung to form a garland so that 4 particular flowers are never separated is
Option 1 : 960
Option 2 : 2880
Option 3 : 288
Option 4 : 576

Ques 155 : Choose the correct answer.
At an election there are five candidates and three members to be elected , and a voter may vote for any number of candidates not greater than the number to be elected. Then the number of ways in which a voter may vote is
Option 1 : 25
Option 2 : 30
Option 3 : 32
Option 4 : none of these

Ques 156 : Choose the correct answer.
There are n different books and p copies of each. the number of ways in which a selection can be made from them is
Option 1 : np
Option 2 : pn
Option 3 : (p+1)n -1
Option 4 : (n+1)p-1

Ques 157 : Choose the correct answer.
The sides AB, BC, CA of a triangle ABC have 3,4 and 5 interior points respectively on them. The total number of triangles that can be constructed by using these points as vertices is
Option 1 : 220
Option 2 : 204
Option 3 : 205
Option 4 : 195

Ques 158 : Choose the correct answer.
A lady gives dinner party to five guests to be selected from 9 friends .The number of ways of forming the party of 5,given that two of the friends will not attend the party together is
Option 1 : 56
Option 2 : 126
Option 3 : 91
Option 4 : none of these

Ques 159 : Choose the correct answer.

Each question has four choices out of which only one is correct. A candidate has to answer four questions. The number of ways he fails to give all answers correctly, is
Option 1 : 15
Option 2 : 81
Option 3 : 255
Option 4 : 256

Ques 160 : Choose the correct answer.
A college has 10 basketball players. A 5-member team and a captain will be selected out of these 10 players. How many different selections can be made?
Option 1 : 1260
Option 2 : 210
Option 3 : 10C6 * 6!
Option 4 : 10C5 * 6

Ques 161 : Choose the correct answer.
There are 10 yes or no questions. How many ways can these be answered?
Option 1 : 1084
Option 2 : 2048
Option 3 : 1024
Option 4 : 100

Ques 162 : Choose the correct answer.
If the letters of the word CHASM are rearranged to form 5 letter words such that none of the word repeat and the results arranged in ascending order as in a dictionary what is the rank of the word CHASM?
Option 1 : 24
Option 2 : 31
Option 3 : 32
Option 4 : 30

Ques 163 : Choose the correct answer.
A bag contains 4 white, 5 red and 6 blue balls. Three balls are drawn at random from the bag. The probability that all of them are red, is:
Option 1 : 1/22
Option 2 : 3/22
Option 3 : 2/91
Option 4 : 2/77

Ques 164 : Choose the correct answer.
A box contains 20 electric bulbs, out of which 4 are defective. Two bulbs are chosen at random from this box. The probability that at least one of these is defective, is:
Option 1 : 4/19
Option 2 : 7/19
Option 3 : 12/19
Option 4 : 21/95

Ques 165 : Choose the correct answer.
In a class, 30% of the students offered English, 20% offered Hindi and 10% offered both. If a student is selected at random, what is the probability that he has offered English or Hindi ?
Option 1 : 2/5
Option 2 : 3/4
Option 3 : 3/5
Option 4 : 3/10

Ques 166 : Choose the correct answer.
A box contains 6 red balls, 7 green balls and 5 blue balls. Each ball is of a different size. The probability that the red ball being selected is the smallest red ball, is
Option 1 : 1/18
Option 2 : 1/3
Option 3 : 1/6
Option 4 : 2/3

Ques 167 : Choose the correct answer.
If A and B are 2 independent events and P(A)=0.5 and P(B) = 0.4, find P(A/B):
Option 1 : 0.5
Option 2 : 0.4
Option 3 : 0.88
Option 4 : None of these

Ques 168 : Choose the correct answer.
A 5-digit number is formed by the digits 1,2,3,4 and 5 without repetition. What is the probability that the number formed is a multiple of 4?
Option 1 : 1/4
Option 2 : 1/5
Option 3 : 2/5
Option 4 : 1/120
Option 5 : 4

Ques 169 : Choose the correct answer.
In a single throw of dice, what is the probability to get a number greater or equal to 4?
Option 1 : 1/3
Option 2 : 2/3
Option 3 : 1/2
Option 4 : None of these

Ques 170 : Choose the correct answer.
A bag contains 5 oranges, 4 bananas and 3 apples. Rohit wants to eat a banana or an apple. He draws a fruit from the bag randomly. What is the probability that he will get a fruit of his choice?
Option 1 : 3.5/12
Option 2 : 7/12
Option 3 : 5/12
Option 4 : None of these

Ques 171 : Choose the correct answer.
There are two boxes A and B. Box A has three red and four blue balls. Box B has five red and two blue balls. Anya draws a ball from each bag randomly. What is the probability that both balls are red?
Option 1 : 4/7
Option 2 : 8/49
Option 3 : 7/8
Option 4 : 15/49

Ques 172 : Choose the correct answer.
Ravi has a bag full of 10 Nestle and 5 Cadbury chocolates. He draws two chocolates. What is the probability that he got at least one Nestle chocolate?
Option 1 : 2/3
Option 2 : 3/7
Option 3 : 2/21
Option 4 : None of these

Ques 173 : Choose the correct answer.
The probability of having at least one tail in 5 throws of a coin is
Option 1 : 1/32
Option 2 : 31/32
Option 3 : 1/5
Option 4 : None of these

Ques 474 : Choose the correct answer.
A bag contains 5 yellow and 4 brown pencils. If two pencils are drawn, what is the probability that the pencils are of the same colour?
Option 1 : 5/108
Option 2 : 1/6
Option 3 : 5/18
Option 4 : 4/9

Ques 475 : Choose the correct answer.
A single letter is drawn at random from the word, “ASPIRATION”, the probability that it is a vowel is?
Option 1 : 1/2
Option 2 : 1/3
Option 3 : 3/5
Option 4 : 2/5

Ques 476 : Choose the correct answer.
The probability that a man can hit a target is 3/4. He tries 5 times. The probability that he will hit the target at least three times is:
Option 1 : 291/364
Option 2 : 371/464
Option 3 : 471/502
Option 4 : 459/512

Ques 477 : Choose the correct answer.
An unbiased dice is rolled 3 times. The probability that the value on the dice is not more than 4 in any of the 3 rolls is:
Option 1 : 8/27
Option 2 : 1/27
Option 3 : 26/27
Option 4 : 2/3

Ques 478 : Choose the correct answer.
Probability of occurrence of event A is 0.5 and that of event B is 0.2. The probability of occurrence of both A and B is 0.1. What is the probability that none of A and B occur?
Option 1 : 0.3
Option 2 : 0.4
Option 3 : 0.7
Option 4 : None of these

Ques 479 : Choose the correct answer.
An unbiased coin is tossed 5 times. If tail appears on first four tosses, then probability of tail appearing on the fifth toss is:
Option 1 : 1/2
Option 2 : 1
Option 3 : 0
Option 4 : 4/5

Ques 480 : Choose the correct answer.
X and Y are two independent events. The probability that X and Y occur is 1/12, and the probability that neither occur is 1/2, the probability of occurrence of X can be:
Option 1 : 1/3
Option 2 : 1/5
Option 3 : 1/2
Option 4 : 1/10

Ques 481 : Choose the correct answer.
An unbiased coin is tossed n times. If the probability of getting 4 tails equals the probability of getting 7 tails, then the probability of getting two tails is:
Option 1 : 55/2048
Option 2 : 3/4096
Option 3 : 1/1024
Option 4 : None of these

Ques 482 : Choose the correct answer.
Sudhanshu and Pankaj stand in a circle with 10 other persons. If the arrangement of the person is at random, then the probability that there are exactly 3 persons between Sudhanshu and Pankaj is?
Option 1 : 9/11
Option 2 : 2/11

Option 3 : 1/11
Option 4 : None of these

Ques 483 : Choose the correct answer.
Three numbers are chosen from 1 to 30 randomly. The probability that they are not consecutive is:
Option 1 : 1/145
Option 2 : 144/145
Option 3 : 139/140
Option 4 : 1/140

Ques 484 : Choose the correct answer.
A bag is full of 20 bananas and no other fruit. Rajeev draws a fruit from the bag. What is the probability that he will draw a banana?
Option 1 : 1
Option 2 : 0
Option 3 : 1/2
Option 4 : None of these

Ques 485 : Choose the correct answer.
An unbiased dice is rolled 5 times and the outcomes are 1, 2, 3, 4 and 5 respectively. If it is rolled again, what is the probability that the outcome is 6?
Option 1 : 1
Option 2 : 5/6
Option 3 : 1/6
Option 4 : None of these

Ques 486 : Choose the correct answer.
The probability of drawing an apple from a bag of fruits is 6/25. How many apples should Ravi draw, so that there is a chance he will draw 12 apples on average?
Option 1 : 25
Option 2 : 50
Option 3 : 12
Option 4 : None of these

Ques 487 : Choose the correct answer.
What is the probability for a day to be Sunday?
Option 1 : 1/7
Option 2 : 1/5
Option 3 : 52/365
Option 4 : None of these

Ques 488 : Choose the correct answer.
Rani has a bag with three blue and three yellow coins. She takes out a coin, sees its colour and puts it back in the bag. She does this thrice. What is the probability that she saw all blue coins.
Option 1 : 1/8
Option 2 : 1/2

Option 3 : 1/3
Option 4 : None of these

Ques 489 : Choose the correct answer.
Shikhar has a bag with 2 balls, each of which can be black or white with equal probability. Now, he draws out a ball and it turns out to be black. After this event, what is the probability that both balls are black?
Option 1 : 1/2
Option 2 : 1/4
Option 3 : 1
Option 4 : None of these

Ques 490 : Choose the correct answer.
A coin is tossed thrice. What is the probability that the first toss of coin lands head, second tail and third lands tail as well?
Option 1 : 1/16
Option 2 : 3/8
Option 3 : 1/8
Option 4 : None of these

Ques 491 : Choose the correct answer.
The probability of occurrence of event A is 0.3 and that of event B is 0.4. The events are independent. What is the probability of occurrence of both A and B?
Option 1 : 0.7
Option 2 : 0.1
Option 3 : 0.12
Option 4 : Cannot be determined

Ques 492 : Choose the correct answer.
The probability of occurrence of event A is 0.1 and that of event B is 0.2. The events are mutually exclusive. What is the probability of occurrence of both A and B?
Option 1 : 0.1
Option 2 : 0
Option 3 : 1
Option 4 : Cannot be determined

Ques 493 : Choose the correct answer.
The probability of occurrence of event X is 0.8 and that of event Y is 0.05. The events are mutually exclusive. What is the probability of occurrence of either X or Y?
Option 1 : 0.85
Option 2 : 0.75
Option 3 : 0
Option 4 : Cannot be determined

Ques 494 : Choose the correct answer.

10% of the voters did not cast their vote in an election between two candidates. 10% of the votes polled were found invalid. The successful candidate got 54% of the valid votes and won by a majority of 1620 votes. The number of voters enrolled on the vo

Option 1 : 25000

Option 2 : 33000

Option 3 : 35000

Option 4 : 40000