PLAT EXAM DWITIYA

Incubated at ROLTA INCUBATION CENTRE MANIT BHOPAL

Sponsored by Vijay Convent Higher Secondary school

MM-216   9th-10th   Time-2.0 hour

Maths

1. Which of the following fractions lie between 1/5 and 1/4?

a) 7/33   b) 4/11   c) 13/57   d) 7/17

2. The product of two symmetric expressions is a/an _____ expression.

a) Symmetric   b) asymmetric   c)Polynomial   d) None of these

3. Krishna and Sudheer have some marbles with them. If Sudheer gives 10 marbles to Krishna, Krishna will have 40 more marbles than Sudheer. If Sudheer gives 40 marbles to Krishna, Krishna will have 5 times as many marbles as Sudheer. Find the number of marbles with Sudheer.

a) 65   b) 55   c) 70   d) 50

4. The solution of the equation $X^2 + X + 1 = 1$ is

a) X=0   b) X= -1   c) Both a and b   d) Can not be determined

5. If the ratio of the mean and median of a certain data is 5:7, then find the ratio of its mode and mean.

 a) 2:5   b)11:5   c)6:5   d)2:3

6. A pack has 90 cards. Each card was marked with a different number between 110 to 199. A card was selected at random. Find the probability that the number on it is not a perfect square.

 a)37/45   b)43/45   c)41/45   d)13/15

7. Bala opened a fixed deposit account for 2 years by making a deposit of ₹12,000. The rate of interest was 20% per annum, interest is compounded annually. Find the total interest paid by the bank (in rupees).

 a)4800   b)5280   c)5760   d)6240

8. From each corner of a square sheet of side 8 cm, a square of side y cm is cut. The remaining sheet is folded into a cuboid. The minimum possible volume of cuboid formed is M cubic centimetre. if y is an integer, then find M.

 a)32   b)18   c)36   d)12

9. Find the value of k, if points (10,14), (-3,3), (k,-8) are collinear.

 a) 16   b) 18   c) -18   d) -16

10. P is an interior point of an equality triangle ABC. If P is equidistant from AB and BC, BC and AC then Angle BPC = _____ .

 a) 120°   b)90°   c) 60°   d) 150°

11. The length of an arc that subtends an angle of 30° at the center of the circle of radius 42 cm is
_____.

   a) 22 cm   b) 44 cm   c) 11 cm   d) 3.14 cm

12. In a class 45% of the students drink pulpy orange and 90% of the remaining students drink Maaza. No student drinks both maaza and pulpy orange. Find the percentage of students in the class who drink neither maaza nor pulpy orange.

a) 4.5%   b) 6.5%   c) 7.5%   d) 5.5%

13. A shopkeeper sells an article, whose cost price is ₹400, for ₹462 including sales tax @ 5%. Find the profit percentage of shopkeepers.

a) 7%   b)12%   c)10%   d)8%

14. There are three amounts a,b, and c, such that b is the simple interest on c and c is the simple interest on a. Which of the following must always be true?

a) $a^2 = bc$ b) $b^2 = ac$ c) $c^2 = ab$ d) $a^2 + b^2 = c2$

15. The ratio of students in 2 classrooms A and B is 3:2. If 10 is students from A to B, the ratio becomes 7:8. Now how many students must shift from A to B in order for the ratio to become 8:7?

a) 49:25   b)25:9   c)36:25   d)49:36

16. Alex invested in the shares of a company. If the price of each share was ₹20 more, then his investment would ₹6000 more. How many shares did he buy?

a)300   b)400   c)360   d)450

17. P, Q and R can complete a job in 6 days,9 days, and 12 days respectively. They worked together and completed it. They earned a total of ₹2600. Find P's share.

a)1350   b)1500   c)900   d)1200

18. Anil traveled from P to Q at f kmph. He returned to Q at r kmph. His average speed for the entire journey was (f+r)/2. PQ=240 km. His total timetable was 6 hours. Find f.
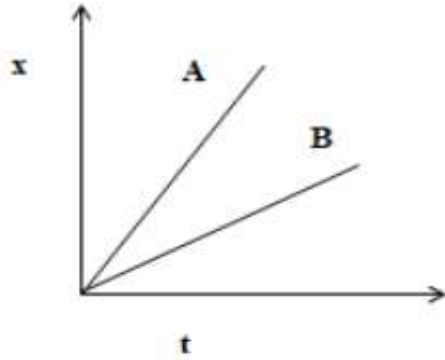
a)120   b)90   c)80   d)60

Science

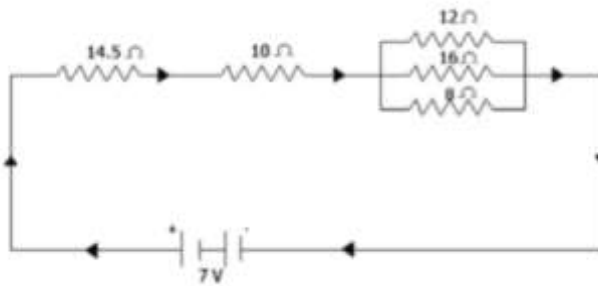1. When a body moves uniformly along the circle, then:
a.   Its velocity changes but speed remains the same
b.   Its speed changes but velocity remain the same
c.   Both speed and velocity changed
d.   Both speed and velocity remain the same
2. The velocity-time graph of two bodies A and B traveling along the +x direction are given in the figure

a) Acceleration of A is more the B
b) Acceleration of B is more than B
c) Both have the same acceleration.
d) We can not comment about acceleration through graph

3]Examine the given circuit and calculate the total current flowing in the circuit.

a) 28amp   b) 4 amp.   c)0.25 amp   d) 3.7 amp

4] Net force acting on an object in a perpendicular direction is called

a) Thrust   b) Gravitational force   c) Buoyancy   d) Pressure

[5] Under which of the following conditions a concave mirror can form an image larger than the actual object?

  (a) When the object is kept at a distance equal to its radius of curvature

  (b) When an object is kept at an infinity.

  (c) When an object is placed between the focus and center of curvature

  (d) When an object is kept at a distance greater than its radius of curvature

[6] Which of the following consists of particles are in constant motion?

1. Ice at a temperature of -4 degrees Celsius

2. Diamond at room temperature

3. Molten lead

4. A balloon filled with air

        a) 3 and 4 are correct   b) 1,3, and 4 are correct

        c) 2,3,4 are correct   d) 1,2,3, and 4 are correct

[7] A does 500 joules of work in 10 minutes and B does 600 joules of work in 20 minutes the power delivered by A and B is P1 and P2 respectively find out the relationship between P1 and P2

  a) P1= P2   b) P1>P2   c)P1<P2   d) P1 and P2 are undefined.

[8] A 4 kg block of wood is pulled along the horizontal ground from rest and a force of 15 newtons is required to produce an acceleration of 2m/sec2. What should the magnitude of force be to pull the block of wood at a constant speed of 5 m/sec on the same horizontal ground?

   a) 5N   b) 7 N   c) 8N   d) 10N

[9] A big explosion on the moon cannot be heard on earth because

   a)The explosion produces high-frequency sound waves that are inaudible

   b)Sound waves require a material medium for propagation

   c)Sound waves are absorbed in the atmosphere of the moon.

   d)Sound waves are absorbed in the earth's atmosphere

[10] The poorest conductor of heat among metals is

(a) Mercury   (b) Lead   (c) Calcium   (d) Sodium

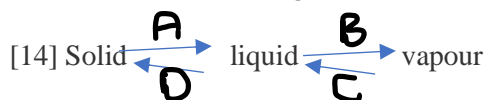[11] Which one of the following statements about rennin is correct?

a. It is secreted by adrenal glands   b) It converts angiotensinogen to angiotensin

c. It is secreted by peptide cells of gastric glands into the stomach   d. It is a hormone

[12] Convert 67^0 F to Celcius?

  a)19.44^0C b)18^0C c)22.34^0C d) 25.66^0C

[13] Doctors will suggest _____ if the person is suffering from high blood cholesterol.

a)Ghee   b)Vegetable Oil   c)Dalda   d)Lard
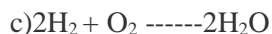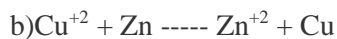
[14] Solid ⇄ (A/D) liquid ⇄ (B/C) vapour

The name of A,B,C, and D processes respectively are-

   a)Melting, vaporization ,condensation, freezing

   b)Fusion , Sublimation ,condensation, freezing

   c)Fusion , condensation, vaporization ,freezing

d) Melting, vaporization, freezing, condensation

[15]Which one is not an example of redox reaction?

a) $Cl_2 +2 H_2O +So_2$ ------$4H^+ +So_4^{3-} + 2 Cl^-$

b)$Cu^{+2} + Zn$ ----- $Zn^{+2} + Cu$

c)$2H_2 + O_2$ ------$2H_2O$

d)$HCl + H_2o$ ----- $H_3 O^+ + Cl^-$

[16]Which of the following has the same electronic configuration?

a) Na^+ and Mg^+ b) Na^+, Mg^{+2} and Al^{+3}

c) Na and Na^+ d) K^+ and O^{-2}

[17] SI unit of force/speed

a)Newton*second/meter   b) newton   c) meter/sec*newton   d) none of these

[18]A doctor advised a one boy in the village to take spinach,so from which disease boy is suffering.

a)malaria   b) anaemia   c)polio   d) fever

REASONING

1)If the first half of the English alphabet is written in reverse order and then the second half is written as it is then find the 15th letter from right
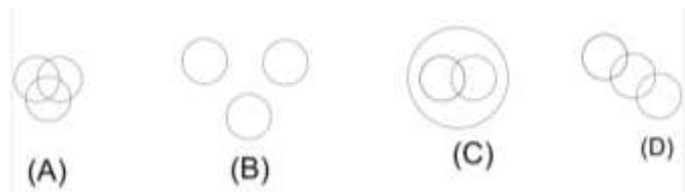
          a) A   b) B   c) C   d) D

2) Which diagram correctly represents the relationship between politicians poets and women

(A)   (B)   (C)   (D)

3) In the given series replace the ? with the suitable option

     230, 246, 271, 307,……

          a) 412   b) 356   c) 518   d) 612

4) In the letter series some of the letters are missing select the correct alternative

_BC_CA_ ABA _C_CA

          a) BCBBA   b) BABAC   c) BBCBA   d) ABCBB

5) Bharat's mother says to Bharat. ' My mother has a son whose son is Amar'.How is Amar related to Bharat?

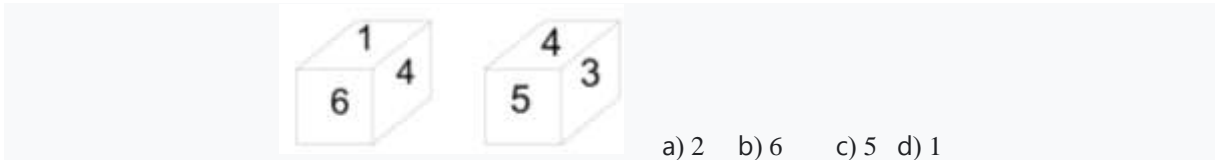   a) cousin   b) father   c) brother   d) grandfather

6) If Rs.1066 are divided among A,B,C and D such that A:B =3:4, B:C=5:6, C:D= 7:5, then who will get the maximum?

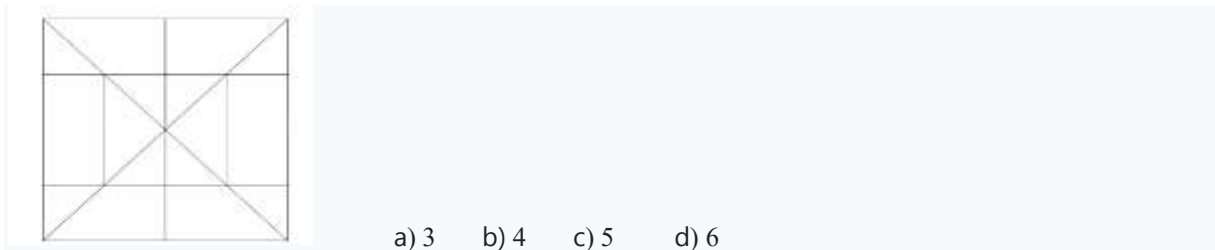   a) B   b) A   c) C   d) D

7) Reeta stands third in a row of 20 students arranged in ascending order of height. 5 new students join the group all taller than Rita. what will be Reeta's position if the students are now arranged in descending order of their Heights?

    a) 22nd b) 23rd c) 18th d) none

8) Two positions of a dice are shown here. Find the number on the face opposite to the face having the number 3?

    a) 2   b) 6   c) 5 d) 1

9) Find the number of squares in the figure below

    a) 3   b) 4   c) 5   d) 6

10) Find the missing number if a certain rule is followed row-wise or column-wise

7	4	5
8	7	6
3	3	
29	19	31

    a) 3   b) 4   c) 5   d) 6

11) Arrange the following in a logical order:

  1. Shoulder 2.Wrist 3. Elbow 4. Palm 5. finger

    a) 2,4,5,3,1   b) 3,1,4,2,5   c) 3,4,5,2,1   d) 5,4,2,3,1

12) A man is facing North, he turns 90 degrees in the anticlockwise direction and then 135 degrees in the clock wise direction. which direction is he facing now?
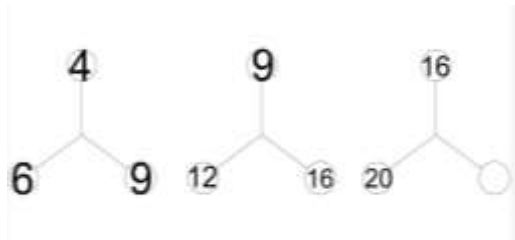
a) north-south   b) north-east   c) south-west   d) south-east

13) Find the missing term in the given series:

APJ, BRY, DTW, GVT, KXP,_?

a) PZK   b) PZL   c) OZK   d) OYL

14) Find the number which replaces the question mark?

a) 60   b) 50   c) 25   d) 40

15) Ravi starts from his house and moves south. He walks 100 M, then turns left and walks 200 m, turns right, and works 500 m. How far is he from his house?

a) 400 √5m   b) 800m   c) 200 √10m   d) 200 √2 m

16) If WORK is coded as 4-12-9- 16 then how will you code WOMAN?

a) 4-12-14-26-13   b) 4-12-13-26-14   c) 4-12-11-26-13   d) 23-15-13-1-14

17) There were a total of 10 bicycles and tricycles. If the total number of wheels was 24. How many tricycles were there?

a) 2   b) 6   c) 18   d) 4

18): A total of 324 coins of 20 paise and 25 paise make a sum of rupees 71. The number of 25 paise coins is

a) 120   b) 124   c) 144   d) 200