CLASS

6

BVPY QUESTION PAPER – STAGE 1

December 17, 2020

Part A – Mathematics (Q1 to Q30)

Part B – Science (Q1 to Q30)

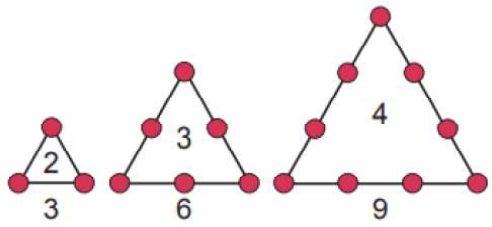
Maximum Marks: 60 **Duration : 60 minutes**

Instructions for Students :

1. Each question carries one mark.
2. This paper consists two parts i.e. Part 'A' (Mathematics) Q.1 to 30, Part 'B'(Science) Q1 to 30.
3. There is no negative marking .

PART 'A' (MATHEMATICS)

1. Here is the start of a pattern.



The number below each triangle gives the total number of dots on the triangle.

The number inside the triangle gives the number of dots on each side of the triangle.

When the total number of dots on a triangle in this pattern is 72, how many dots are there on each of its sides ?

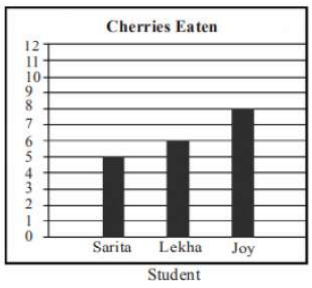
A. 25 B. 26

C. 27 D. 24

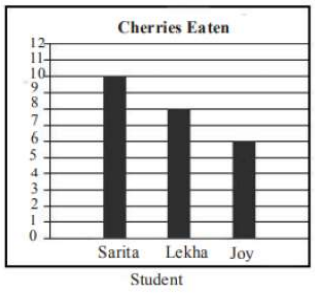
2. Look at the tally chart at the top of the page. The tally chart shows the number of cherries each student ate. Which graph matches the tally marks in the chart ?

Cherries Eaten	
Sarita	𝍸 𝍸
Lekha	𝍸 |
Joy	𝍸 |||

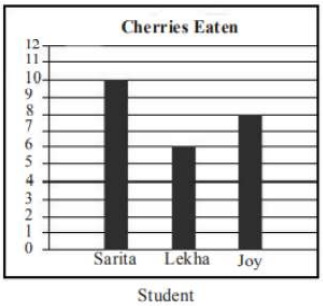
A.



B.

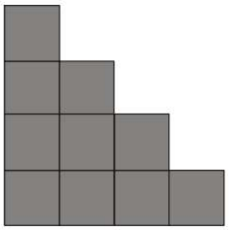


C.



D. None of these

3. The given figure is made up of *10* squares of the same size. The area of the figure is *40 cm²*. Find the perimeter of the figure.



A. 32 cm
B. 28 cm
C. 24 cm
D. 36 cm

4. A large Pizza is shared by three friends Amar, Akbar & Anthony. Amar ate $\frac{1}{5}$ th part of the pizza, Akbar ate 0.3 of it and Anthony ate $\frac{2}{9}$ th of it.

Based on the above situation, which of the following statements is true ?

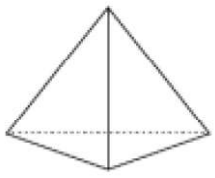
Statement 1 : Akbar ate less pizza than Anthony

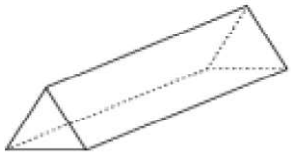
Statement 2 : $\frac{5}{18}$ th part of the pizza is still left.

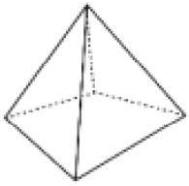
A. Statement 1 is true
B. Statement 2 is true
C. Both of the statements are true
D. None of the statements are true

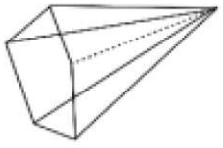
5. Match the following diagrams with their respective conditions–

	Faces	Vertices	Edges
(a)	4	4	6
(b)	5	5	8
(c)	6	6	10
(d)	5	6	9

(i) 

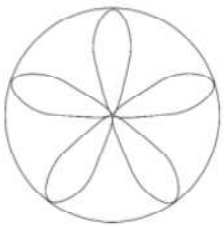
(ii) 

(iii) 

(iv) 

A. i → a, ii → b, iii → c, iv → d
B. i → a, ii → c, iii → b, iv → d
C. i → a, ii → d, iii → b, iv → c
D. i → a, ii → b, iii → d, iv → c

6. How many lines of symmetry does the following figure have ?



A. 0
B. 1
C. 5
D. 4

7. Three or more lines which pass through same point are called
A. intersecting lines
B. parallel lines
C. perpendicular lines
D. concurrent lines

8. Which of the following statement is true :
A. 2 subtracted from –3 gives 1
B. –1 subtracted from –5 gives 6
C. 3 subtracted from –8 gives –11
D. 1 subtracted from –7 gives –6

9. $2x - 3$ may be expressed as
A. Ram's age is 3 years less than Shyam's age
B. Ram's age is 3 years less than twice Shyam's age.
C. Ram's age is 3 years more than twice the Shyam's age
D. Ram's age is 3 years more than Shyam's age.

10. The cost of 105 envelopes is Rs 35. How many envelopes can be purchased for Rs 10 ?
A. 12
B. 40
C. 30
D. 50

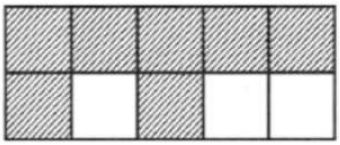
11. Which of the following has been paired incorrectly ?
A. MDCC – 1700
B. LXVIII – 68
C. DLXI – 561
D. XCIX – 119

12. How much john paid for the cost of these articles ?

Articles	Cost
Chairs	Rs. 2876
Night Lamp	Rs. 98.75
Paint Brush	Rs. 23.50
Colours	Rs. 234.05

A. Rs. 3465.40
B. Rs. 3232.30
C. Rs. 3265.10
D. Rs. 3554.50

13. Which one of the following is correct about the ratio form of the shaded parts to unshaded part of the given figure ?



A. 7 : 10
B. 7 : 3
C. 10 : 11
D. 5 : 11

14. Find the value of $5(x - y) + 4(x + y)$ if $x = 2$ and $y = 3$.

A. 11
B. 10
C. 15
D. 14

15. The first, third and fourth term of a proportion are 40, 60 and 45 respectively, then the second term is ?

A. 20
B. 30
C. 40
D. 50

16. The Hindu–Arabic numeral for the Roman numeral *LCCXL* is ?

A. 5500
B. 340
C. 190
D. 120

17. Product of two numbers is 56 and their *HCF* is 4. Find their *LCM*.

A. 12
B. 14
C. 11
D. 10

18. Which one of the following statement does not represent a property of addition of whole numbers ?

A. 58 + 33 = 33 + 58
B. 15 + 7 is a whole number
C. 599 + 0 = 5990
D. 5 + (4 + 3) = (5 + 4) + 3

19. What do you mean by co–primes ?

A. If there is no common divisor other than 1 between two numbers

B. If there is no common divisor between two prime numbers

C. If there are two common divisors between two prime numbers

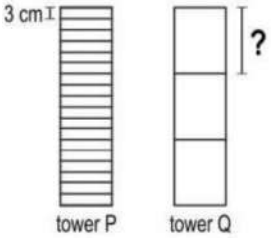
D. If there are three common divisors between two prime numbers

20. Find the cost of carpeting at the rate of 60 per square meter if the length and width of a hall are 50 *m* and 60 *m* respectively.

A. 180000 B. 157950

C. 155940 D. 120000

21. Raghu makes tower *P* with 18 identical blocks of height 3 *cm* each. He then makes tower *Q* of the same height, but with 3 identical blocks as shown.

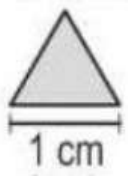


Which of these is the height of the block used to make tower *Q* ?

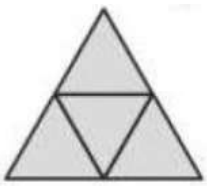
A. 3 B. 6

C. 18 D. None of these

22. Shown here is a triangle. Each side of the triangle is 1 *cm* long.



4 such triangles are arranged to make a bigger triangle as shown below.



What is the perimeter of the bigger triangle ?

A. 3 cm B. 4 cm

C. 6 cm D. 12 cm

23. Answer the question based on the below table.

The table shows the departure time of different buses from Bengaluru bus stand to different destinations.

Destination	Departure times			
Chennai	21:00	21:50	22:00	22:15
Ernakulam	15:00	18:00	19:15	20:00
Mangalore	07:45	21:15	22:20	23:15
Ooty	09:15	10:00	22:00	22:15

Geeta reaches Bengaluru bus stand at 6:20 PM. She wants to take the next bus to Ernakulam.

How long would she have to wait at the bus stand ?

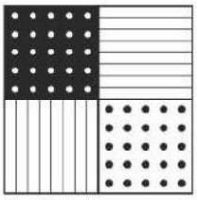
A. 40 minutes

B. 55 minutes

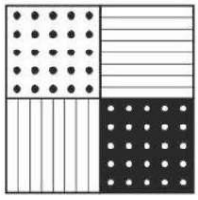
C. 1 hour 15 minutes

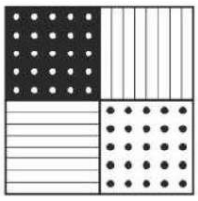
D. 2 hour 55 minutes

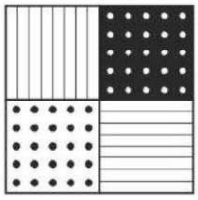
24. Look at the tile shown below.

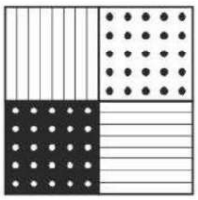


Which of the following is the same tile as the one shown above ?

A. 

B. 

C. 

D. 

25. Consider the following statements :

Statement 1 : Decimal form of a fraction is greater than the decimal form of its equivalent fraction.

Statement 2 : Decimal form of a fraction is equal to the decimal form of its equivalent fraction.

Which one of the following is correct about the above statements ?

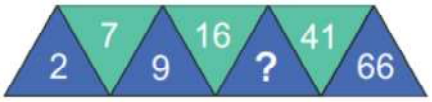
A. Statement 1 is true and 2 is false

B. Both statements are false

C. Statement 1 is false and 2 is true

D. Both statements are true

26. What is the missing number is this number pattern ?



A. 24 B. 25

C. 34 D. 35

27. Read the following statements and mark the correct option :

(a) Every isosceles triangle is an equilateral triangle

(b) Every equilateral triangle is an isosceles triangle

(c) Every rectangle is a square

(d) Every square is a rectangle

A. (a) True (b) True (c) True (d) True B. (a) True (b) False (c) True (d) False

C. (a) False (b) True (c) False (d) True D. (a) False (b) False (c) False (d) False

28. Which of the following numbers is equal to 1 billion ?

A. 10 lakh B. 1 crore

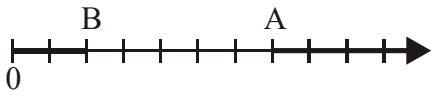
C. 10 crore D. 100 crores

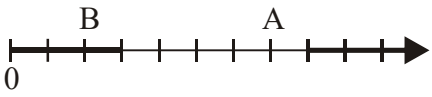
29. What least number should be added to 1330 to get a number exactly divisible by 43 ?

A. 10 B. 5

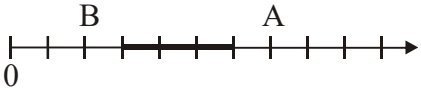
C. 3 D. 7

30. Which number line correctly represents the numbers less than or equal to *B* and the numbers greater than or equal to *A* ?

A. 

B. 

C.

D. 

PART 'B' (SCIENCE)

1. When a magnet is suspended freely it always aligns itself in ———— direction?

   A. North B. N-S

   C. N-W D. N-E

2. Light travels in -

   A. straight line B. Curved line

   C. Circle D. None of these

3. A lunar eclipse always occurs on a _____.

   A. Full moon day B. New moon day

   C. Any day D. Both A and B

4. Motion of the stone dropped under gravity :

   A. Linear B. Circular

   C. Rotational D. Vibrational

5. The motion which repeats itself after a regular interval of time :

   A. Periodic B. Non Periodic

   C. Rotational D. Vibrational.

6. A force can :

   A. Change the direction of a moving body B. Change the state of rest or uniform motion of a body

   C. Change the shape of a body D. All of the above

7. Types of mechanical energy are :

   A. kinetic energy only B. potential energy only

   C. kinetic energy and potential energy both D. neither kinetic energy nor potential energy

8. Electrical wires are covered with

   A. insulating material B. conducting material

   C. semi-insulator material D. All of these

9. Speed of light is –

   A. 3×10^9 ms^{-1} B. 3×10^8 ms^{-1}

   C. 3×10^7 ms^{-1} D. 3×10^{10} ms^{-1}

10. Which scientist discovered that current carrying wire behave as magnet?

A. Newton
B. Hans Christian Oersted
C. Einstein
D. Faraday

11. Material that is hard, opaque and has a shining surface when freshly cut is :

A. Rubber
B. Wood
C. Copper.
D. Plastic

12. A group having all animals is :

A. Bamboo, Grass, Paint
B. Grasshopper, Pigeon, Whale.
C. Mango,Water, Watermelon.
D. Rose, Wind, Tomato.

13. The following groups of non-living objects that can be classified as man-made is :

A. Aerated drinks, ice cream and pizza.
B. Milk, biscuits and bread.
C. Mango, orange and tomato.
D. Tomato, sandwich and chocolate.

14. Mixture of salt and iron powder is separated by :

A. Hand picking
B. Magnetic separation
C. Sieving
D. Churning

15. The mixture which can be separated into its components by evaporation is :

A. Tea with tea leaves
B. Fruit juice with its pulp
C. Salt in sea water
D. Chalk powder in water

16. A glass containing muddy water is left undisturbed. After sometime the particles of mud settle at the bottom. This is called :

A. Decantation
B. Filtration
C. Sedimentation
D. Evaporation

17. Why are cotton clothes more common than silk cloth?

A. Cotton clothes are more beautiful
B. Cotton clothes cannot be used in all seasons
C. Cotton is less expensive than silk
D. None of these

18. The water cycle in nature involves the following processes sequentially

A. Evaporation, Precipitation, Condensation
B. Precipitation, Condensation, Evaporation
C. Evaporation, Condensation, Precipitation
D. Condensation, Evaporation, Precipitation

19. Which of these is true about matter ?

A. It is made up of particles
B. It occupies space.
C. It has mass.
D. All of these

20. Heating a substance causes it to

A. Expand
B. Contract
C. Become smaller
D. Stay the same

21. Which of the following statement is or are incorrect ?

A. Many sea animals have streamlined bodies to help them move in sea water easily.
B. Most of the sea animals have gills which enable them to use oxygen dissolved in water for breathing.
C. Dolphin and whales breathe in air through nostrils which are located on the upper parts of their heads.
D. None of the above.

22. Match the Column – A with Column – B:

Column – A	Column – B
(i) Plough	(a) Living thing
(ii) Gum	(b) Earthworm
(iii) Gills	(c) Acacia tree
(iv) Skin	(d) Fishes
(v) Frogs	(e) Non – living things

A. (i)– (e), (ii) – (c), (iii) – (d), (iv) – (b), (v) – (a)
B. (i)– (a), (ii) – (c), (iii) – (d), (iv) – (b), (v) – (e)
C. (i)– (d), (ii) – (c), (iii) – (a), (iv) – (b), (v) – (e)
D. (i)– (a), (ii) – (d), (iii) – (c), (iv) – (b), (v) – (e)

23. Which of the following is a non communicable disease?

A. Chicken pox
B. Common Cold
C. Beri-Beri
D. Measles

24. If you get a cut by a dirty or rusted object you may get :

A. a fracture
B. a sprain
C. rabies
D. tetanus

25. The bulb shaped structure that connects brain to spinal cord is :

A. Medulla
B. Nerve
C. Cerebrum
D. Cerebellum

26. Name the plant which have roots outside the soil :

A. Money plant
B. Sugarcane
C. Banyan tree
D. All of the above

27. Given below is a list of edible plants:

(i) Banana (ii) Pumpkin (iii) Lady's finger (iv) Brinjal

Which pair of plants have two or more edible parts?

A. (i) and (ii)
B. (ii) and (iii)
C. (iii) and (iv)
D. (i) and (iv)

28. Given below are the steps to test the presence of proteins in a food item:

(i) Take a small quantity of the food item in a test tube, add 10 drops of water to it and shake it.

(ii) Make a paste or powder of food to be tested.

(iii) Add 10 drops of caustic soda solution to the test tube and shake well.

(iv) Add 2 drops of copper sulphate solution to it.

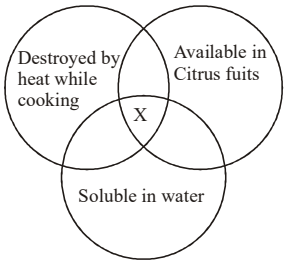
Which of the following is the correct sequence of the steps?

A. i, ii, iv, iii
B. ii, i, iv, iii
C. ii, i, iii, iv
D. iv, ii, i, iii

29. Which type of joint is shown in the given figure?

A. Ball & Socket joint
B. Pivot joint
C. Hinge joint
D. Gliding joint

30. Refer to the above Venn diagram and choose the correct symptom related to the deficiency of X.



A. Weak muscles
B. Weack bones
C. Weak immune system
D. Weak eyes

Space for rough work

Space for rough work