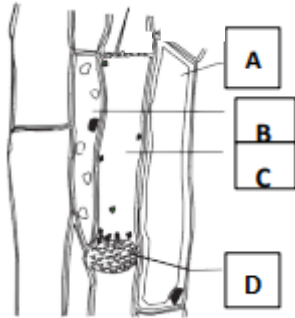




10) Potential difference of 220 V and electricity of 0.5 A is given to the primary winding of a 100% efficient transformer. When giving this, potential difference of 11V is gained from secondary winding. What is the current passing through that circuit?

- (1) 0.025 A                      (2) 0.5 A                      (3) 10 A                      (4) 40 A

11) (A)



(1) Find the structure of the tissue given above,

.....

(2) Name A,B,C and D

A - .....

B - .....

C - .....

D - .....

(B) Name the group of organisms which has the following features

(1) Has nematocyst

.....

(2) Formation of gastro vascular cavity for the first time

.....

(3) Has mucus skin

.....

12) (A) A part of the periodic table is given below.

The symbols used here are not their standard chemical symbols. Use only the given symbols to answer the questions given.

A			B	C		D	E
	G	F	K		H		

(1) Name a metalloid

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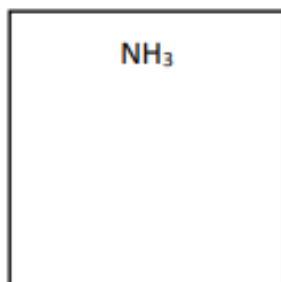
(2) Name 2 elements which have the valence of 2

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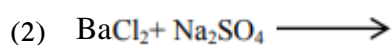
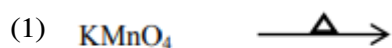
(3) Name the element which has the highest first ionisation energy

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(B) Draw the Lewis structure of  $\text{NH}_3$



(C) Write down the balanced chemical equations

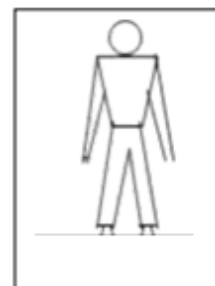


13) A 80 kg man is standing on the electric elevator.

(1) Mark down the forces acting on the man when he is in rest inside the elevator

(2) Find the forces acting on the floor of elevator during each of the given below situations,

(a) When elevator is in rest



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(b) When elevator is moving upwards with the acceleration of  $0.5 \text{ ms}^{-2}$

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4)  $x = 27, y = 4$  means,

$$\left(x^{2/3} + y^2\right)^{-1/2}$$

5) Solve

$$3 \log_{10} x + \log_{10} 96 = 2 \log_{10} 9 + \log_{10} 4$$

6) Solve

$$4x + \frac{5}{y} = 3$$

$$3x - \frac{4}{y} = 10$$

7) Find the value using logarithmic table.

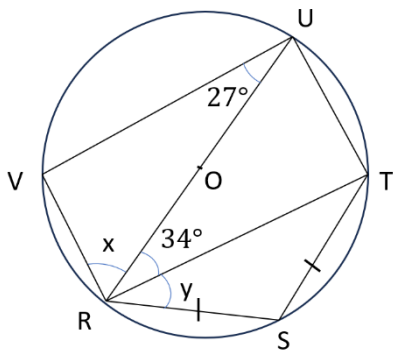
$$\frac{72.83 \times 41}{21.34}$$

8) Find the value  
 (a)  $2 \times 9999^2 - 9999 - 3$

(b) Explain which one of the following is the smallest number.  
 (Not necessary to find using mathematical solving)

- 2012 × 2020
- 2013 × 2019
- 2014 × 2018
- 2015 × 2017
- 2016 × 2016

9) Find the value of  $x$  and  $y$ .



$x$  - .....

$y$  - .....

10) Find the surface area of hemispherical clay pot which has inner radius of 7cm and outer radius of 7.7cm.





- 5) It is compulsory for all students in Technology stream to study the subject 'Science for Technology'. Therefore, how many students are there in the Technology stream who study the subject 'Science for Technology'?
- (1) 60                      (2) 90                      (3) 110                      (4) 160                      (5) 180

**STRUCTURE**

- 6) To win a 50-over cricket match the target set is 309 runs. At the end of the 10<sup>th</sup> over the run rate was 4.5. What is the required minimum run rate in the remaining 40 overs to reach the target??

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- 7) A 200 meters long train travelling at a speed of 60 kilometers per hour takes 30 seconds to pass a tunnel. What is the length of the tunnel in meters?

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- 8) Two men are walking in the same direction at the rate of  $2 \text{ km h}^{-1}$  and  $3 \text{ km h}^{-1}$  parallel to a railway line. A train engine travelling in the same direction, overtakes them completely in 9 seconds and 12 seconds respectively. What is the length of the train engine?

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9) Asitha calculated that the average score of the Math test as 52 in his class of 45 students. Then the teacher discovered that three marks among the 45 items that Asitha used to calculate the average were incorrectly recorded as 18, 27 and 36, instead of the correct values 81, 72 and 63 respectively. What is the correct average score of the Math test?

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10) In a 100m race, Prabath was ahead when he crossed the 90th meter mark. At that moment, Kumar, who was 1m behind, was in second place. If Prabath maintained a constant speed of 24 km/h, what constant speed would Kumar need to maintain in the next 11m in order to finish the race at the same time as Prabath?

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11) A square with a side length of 100 cm has a rectangle with dimensions 80 cm in length and 75 cm in width cut out from it. What is the percentage of the area of the rectangle in relation to the area of the original square?

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12) Passion fruit juice and pure mango juice are mixed in a ratio of 2:3 to prepare a concentrated fruit juice. This mixture is then diluted with water in a ratio of 1:3 to make a fruit drink. What is the volume of passion fruit juice in one liter of this fruit drink?

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13) Five students appeared for an exam where the passing mark was 40. All of them passed, and their total score combined was 205. If two students scored more points and two students scored low points, what is the score of the remaining student?

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14) One year ago, the ages of Anula and Anura were in the ratio 3:4. After 3 years, that ratio will become 5:6. What is the present age of Anula?

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15) A frog and a toad living in the bottom of a well start climbing up the well at the same time. At the beginning of each consecutive minute, half of the distance from the top of the well to the frog is covered by the frog during that minute. For the toad, it is one third of the respective distance. After two minutes, if they are 7 m apart how deep is the well?

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