# SAMPLE PAPER

*for student presently in Class 8 going to 9*

***Time: 3 Hours*** ***Maximum Marks: 320***

## *Instructions:*

1. This Question paper consists of **Five** sections. **All questions will be multiple choice single correct out of four choice with marking scheme in table below:**

| Section | | Question No. | Marking Scheme for each question | |
|---|---|---|---|---|
| | | | Correct answers | Wrong answers |
| **Section – I** | IQ | 1 – 15 | + 4 | - 1 |
| **Section – II** | Physics | 1 – 15 | + 4 | - 1 |
| **Section – III** | Chemistry | 1 – 15 | + 4 | - 1 |
| **Section – IV** | Mathematics | 1 – 20 | + 4 | - 1 |
| **Section – V** | Biology | 1 - 15 | + 4 | - 1 |

2. Answer have to be marked on the OMR sheet.
3. The Question Paper contains blank spaces for your rough work. No additional sheets will be provided for rough work
4. Blank papers, clip boards, log tables, slide rule, calculator, cellular phones and electronic devices, in any form, are not allowed.
5. Before attempting paper write your Name, Registration number and Test Centre in the space provided at the bottom of this sheet.

Registration Number : _____

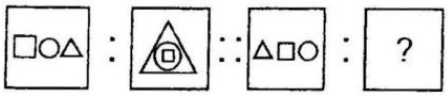
Name of the Candidate : _____

Test Centre : _____

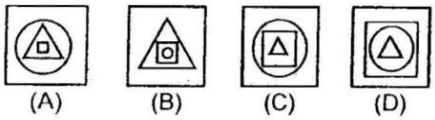
# SECTION - I (IQ)

**Directions : (1 to 5) In the following questions there are two sets of figures. One set is problem figures and the second set is a answer figures. There is some relationship between the first and the second figure of the problem figures set. If there is similar relationship between the third and fourth figures of the same set, select the correct figure from the set of answer figures for question mark (?)**

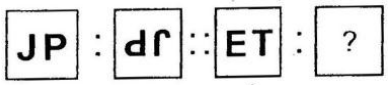
1. Problem Figures



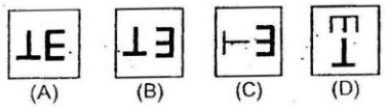

Answer Figures



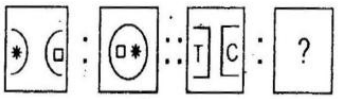

2. Problem Figures



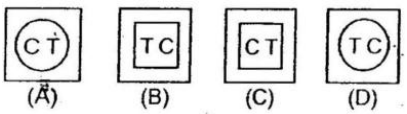

Answer Figures




3. Problem Figures

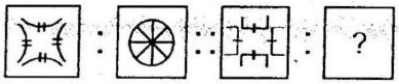



Answer Figures

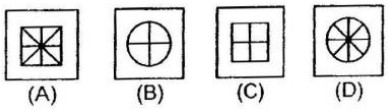



***Space for Rough Work***

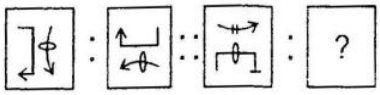
4. Problem Figures



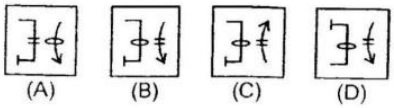
Answer Figures




5. Problem Figures



Answer Figures




6 How many even numbers are there in the following sequence of numbers which are immediately followed by an odd number as well as immediately preceded by an even number ?

8 6 7 6 8 9 3 2 7 5 3 4 2 2 3 5 5 2 2 8 1 1 9

(A) One (B) Three (C) Five (D) None of these

7. In the following series, how many times the sum of two consecutive numbers results an even number?

1 2 3 4 6 3 4 2 5 9 3 6 7 4 1 2 3 6 7 6 5 4 3

(A) 3 (B) 4 (C) 5 (D) None of these

8. In the following number series, how many 8 ‘s are there which are immediately preceded by a number which does not divide it but followed by a number which divides it?

2 8 2 8 3 8 5 8 8 5 3 2 8 2 3 8 4 7 1 5 8 3 8 2 8 6

(A) 1 (B) 2 (C) 3 (D) 4

9. In the following series of numbers, find out how many times 1, 3 and 7 have appeared together. 7 being in the middle and 1 and 3 on either side of 7 ?

2 9 7 3 1 7 3 7 7 1 3 3 1 7 3 8 5 7 1 3 7 7 1 7 3 9 0 6

(A) One (B) Two (C) Three (D) Four

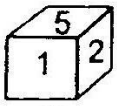
***Space for Rough Work***

10. The positions of how many digits in the number 423157698 will remain unchanged after the digits within the number are arranged in ascending order ?
(A) None (B) One (C) Two (D) Three

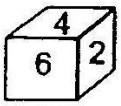
11. In the following series how many C's are there which are immediately followed by 'Y' but not immediately preceded by 'J' ?
J C D Y J C Y O J H C Y Y Y C I J W C Y A C Y
(A) One (B) Two (C) Three (D) Four

12. How many A's are there in the following series which are immediately followed by B as well as immediately preceded by Z ?
A M B Z A N A A B Z A B A Z B A P Z A B A Z A B
(A) Nil (B) One (C) Two (D) Three

**Directions : (13 to 15) In each of the following questions, select the correct option for the question asked.**



(i)



(ii)

13. Which number will come opposite to number 2 ?
(A) 5 (B) 1 (C) 6 (D) 3

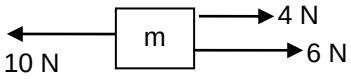
14. Which number will come opposite to number 6 ?
(A) 1 (B) 5 (C) 4 (D) 3

15. Which number will come opposite to number 4 ?
(A) 3 (B) 5 (C) 1 (D) 2

***Space for Rough Work***

# SECTION - II (PHYSICS)

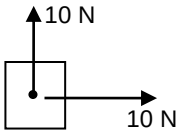
1. A body is acted upon by four forces shown in figure. The motion of the body will be

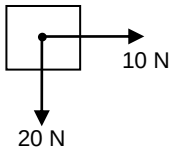


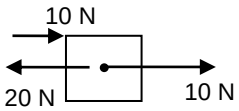

(A) accelerated (B) Rest

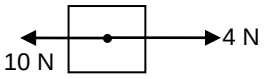
(B) Uniform (D) Rest or Uniform Motion

2. In which of the following the motion of the body will at rest or Uniform motion.

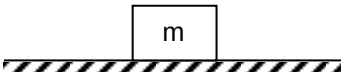
(A) 


(B) 


(C) 


(D) 

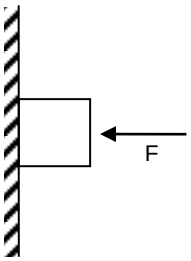

3. A body is kept on a rough horizontal surface shown in fig and is at rest. How many forces are acting on the body




(A) one (B) two

(B) three (D) four

4. A man manage to keep a block at rest against a rough vertical wall by applying force as shown in figure. Force of friction acting on block may be



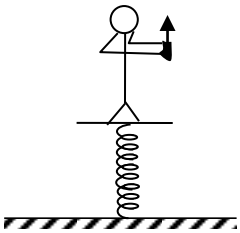

(A) zero

(B) Non zero and acting upward.

(C) Non zero and acting downward.

(D) None of these

5. A man standing on a weighing machine project a ball vertically upward then reading of machine during projection will be



(A) more then actual

(B) less then actual.

(C) equal to actual.

(D) zero

6. A man at rest gravity free space catches a fast moving ball then the man.

(A) do not feel hurt to his hand (B) feel hurt to his hand

(C) will be at rest after he caught the ball (D) can't catch ball

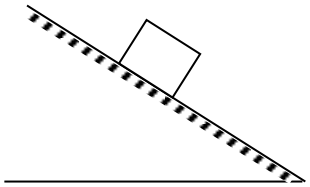
***Space for Rough Work***

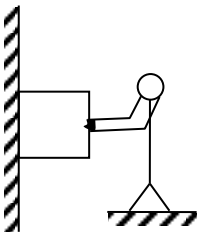
7. A body of mass 2 kg have an acceleration of 5 m/s$^2$ due North then force acting on the body is
(A) 10 N due south (B) 5 N due North (C) 10 N due East (D) 10 N due North

8. A body of mass 2 kg have an acceleration of 2 m/s$^2$ due North and 3 kg body have an acceleration of 4 m/s$^2$ due south. If the two forces are applied to a body of 4 kg along opposite direction then it produces an acceleration of
(A) 2 m/s$^2$ due south (B) 2 m/s$^2$ due North (C) 4 m/s$^2$ due south (D) 4 m/s$^2$ due North.

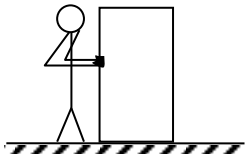
9. A body of mass 2 kg on a smooth incline plane have an acceleration of 2 m/s$^2$ down the incline. The force up along the incline required to move uniformly is
(A) 4 N (B) More then 4 N
(C) Less then 4 N (D) zero.

10. In which of the following cases no force of friction is acting on the block if the body is at rest in each of the case

(A) 

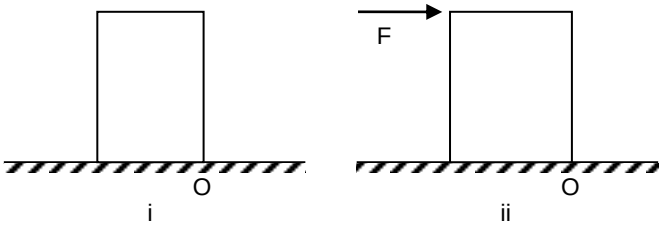
(B) 

(C) 

(D) 

11. Water level of the well is at depth h. A Man claps his hand then echo of the clap is heard after time (V–speed of sound in air)
(A) $\frac{h}{v}$ (B) $\frac{2h}{v}$ (C) $\frac{h}{2v}$ (D) $\frac{4h}{v}$

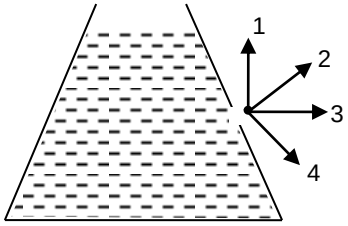
12. The pressure at the edge(0) of the cubical block is




(A) More in (i) (B) More in (ii) (C) equal in both (D) can't decide

***Space for Rough Work***

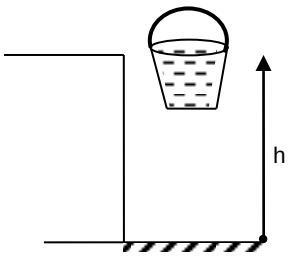
13. Correct direction of flow of fluid through orifice of the container is along




(A) One (B) Two

(B) Three (D) Four

14. Bucket full with water is released from top of a building shown in figure.



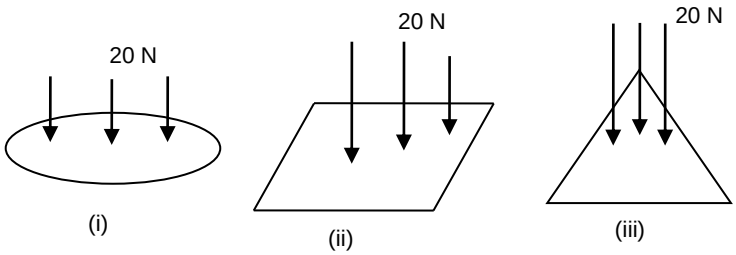

(A) Bucket will reach ground first

(B) water will reach ground first

(C) Both will reach ground at same time.

(D) can't be predicted

15. Force of 20 N is applied uniformly to area of $2m^2$ of different shape as shown in Figure. Pressure is




(A) 10 pa in each case (B) maximum in case (i)

(C) Maximum is case (ii) (D) Maximum in case (iii)

***Space for Rough Work***

# SECTION - III (CHEMISTRY)

1 . The plastic in which monomers are arranged in straight chain are known as:

(A) Thermoplastic (B) Thermosetting plastic

(C) PET (D) Polythene

2. Which of the following metals exists in liquid state at around $30^0$C?

(A) Hg (B) Ga (C) $C_3$ (D) all of these

3. Vaseline is made from?

(A) paraffin wax (B) diesel (C) kerosene (D) petrol

4. Terylene is a popular form of

(A) Nylon (B) Plastic (C) monomer (D) Polyster

5. The metal which can produce $H_2$ gas when reacted with HCl as well as NaOH, is _____.

(A) Cu (B) Fe (C) Al (D) Na

6. What is the full form of PCRA?

(A) Petroleum Conservation Research Association (B) Petroleum Consumption Research Association

(C) Petroleum Conservation Resource Association (D) Petrochmical Consumption Research Association

7. Which fibre is known as regenerated fibre?

(A) acrylon (B)polymer (C) rayon (D) Dacron

8. Which of the following metals do not react with HCl?

(A) Cu (B) Pb (C) Ag (D) both A and C

9. Petrol and diesel can be obtained from

(A) coal (B) coal tar (C) petroleum (D) coal gas

10. Which of the following can be reduced by $H_2$ gas?

(A) $Fe_2O_3$ (B) Zno (C) PbO (D) Cuo

11. What is used for surfacing of roads?

(A) paraffin wax (B) coke (C) bittuminus (D) bitumen

12. Polycot is obtained by mixing

(A) nylon and wool (B) polyester and wool (C) nylon and cotton (D) polyster & cotton

13. The solution of ash of magnesium ribbon is:

(A) acidic (B) basic (C) neutral (D) amphoteric

14. Coal can be used as

(A) Fertilizer (B) Fuel (C) purifier (D) all of these

15. An example of thermosetting plastic?

(A) Melamine (B) polythene (C) PVC (D) nylon

***Space for Rough Work***

# SECTION - IV (MATHEMATICS)

1. The least square number exactly divisible by 4, 6, 10, 15 is
   (A) 400 (B) 100 (C) 25 (D) 900

2. A Gardner arranges plant in rows to form a square. He finds that in doing so 15 plants are left out. If the total number of plants are 3984, the number of plants in each rows are,
   (A) 62 (B) 63 (C) 64 (D) None of these

3. If $\left(\sqrt{6+\sqrt{6+\sqrt{6+.....\infty}}}\right)=P$, then value of P is
   (A) 6 (B) 4 (C) 2 (D) 3

4. The cube of a number is 8 times the cube of another number. If the sum of the cubes of numbers is 243, the difference of the numbers is
   (A) 3 (B) 4 (C) 6 (D) None of these

5. The smallest number which when multiplied with 42336 will make the product a perfect cube is
   (A) 7 (B) 2 (C) 14 (D) 28

6. There are four prime numbers written in ascending order. The product of the first three is 385 and of the last three is 1001. The last number is
   (A) 11 (B) 13 (C) 17 (D) 19

7. Unit place digit in the product of first 40 odd natural number is
   (A) 6 (B) 0 (C) 5 (D) 8

8. What is the digit in the hundred place in the product of first 45 even natural numbers?
   (A) 6 (B) 5 (C) 4 (D) 0

9. The least multiple of 7 which leaves remainder of 4, when divided by 6, 9, 15 and 18 is
   (A) 74 (B) 94 (C) 184 (D) 364

10. Rekha wanted to type first 150 natural numbers. The number of times she had to press the numbered key, is
    (A) 332 (B) 342 (C) 352 (D) 362

***Space for Rough Work***

11. What should be the maximum value of Q in the following equation?
4P8 + 8Q3 + 7R8 = 2079
(A) 5 (B) 9 (C) 7 (D) 8

12. The value of $\sqrt{11-6\sqrt{2}}+\sqrt{2}$ is
(A) 3 (B) greater than 3 (C) less than 3 (D) None of these

13. The value of $\left(0.\overline{6}+0.\overline{7}+0.\overline{8}\right)$ is
(A) $\frac{21}{11}$ (B) $\frac{19}{9}$ (C) $\frac{7}{3}$ (D) None of these

14. The unit digit in the product $(157)^{53}\times(131)^{93}\times(676)^{103}$ is
(A) 7 (B) 4 (C) 2 (D) 6

15. When seventh part of a number is increased by 2 and the fifth part of the same number is decreased by 4, they become equal then number is
(A) 210 (B) 105 (C) 315 (D) None of these

16. A boat covers a certain distance downstream in 3 hours, and it covers the some distance upstream in 5 hours. If the speed of the boat in still water is 8 km/h, then the speed of the stream is
(A) 1 km/hr (B) 1.5 km/hr (C) 2 km/hr (D) 3 km/hr

17. The sum of three consecutive multiples of 8 is 888, then least number among them is
(A) 176 (B) 168 (C) 296 (D) 288

18. The measure of angles of a quadrilateral ABCD are respectively in the ratio 1 : 2 : 3 : 4, the quadrilateral can be
(A) square (B) parallelogram (C) trapezium (D) cyclic

19. ABCD is a rhombus with $\angle ABC = 56^0$ and AC is diagonal then $\angle ACD$ =
(A) $26^0$ (B) $62^0$ (C) $45^0$ (D) $78^0$

20. Three persons A, B and C can do a job alone in 10 days, 12 days and 15 days respectively. In how many days they can finish the job working together?
(A) 6 days (B) 8 days (C) 9 days (D) 4 days

***Space for Rough Work***

# SECTION - V (BIOLOGY)

1. Which of the following statements are correct?
(i) Cochineal insect is used to eliminate Opuntia.
(ii) Water logging decreases the amount of salts in the soil that increases soil fertility.
(iii) Fertilisers are not readily soluble in water, so they are absorbed by the plants slowly.
(iv) Rust of wheat is a fungal disease.
(v) The practice of growing two or more dissimilar crops in the same field one after the other is called mixed cropping.
(A) (i), (ii), (iii) and (v) only (B) (i) and (iv) only
(A) (ii) and (iv) only (D) (iii), (iv) and (v) only

2. The cutting and gathering of crop after it is matured is called X. After this, grains are separated from the crop by a process called X. Z is the process of separating the hay and chaff from the grains.
Which of the following statements is/are correct regarding X, Y and Z?
(A) Z is done with the help of wind in which grains alongwith husk is allowed to fall from a height.
(B) X is done mechanically by combine and manually by plough and harrow.
(C) X is the process known as threshing whereas Y is the process known as winnowing.
(D) Both (A) and (B)

3. A few healthy gram seeds are placed in each of the three pots X, Y and Z containing same type of soil. The soil in pot X is mixed with some green leaves. The soil in pot Y is mixed with old cow dung while soil of pot Z is mixed with urea. Pots are watered regularly and given proper environment for plant-growth. Which of the following will be observed after 10 days?
(A) Lot of growth in Z with replenishment of all the nutrients.
(B) Lot of growth in X without replenishment of any nutrient.
(C) Lot of growth in Y with replenishment of the nutrients.
(D) Both (A) and (C)

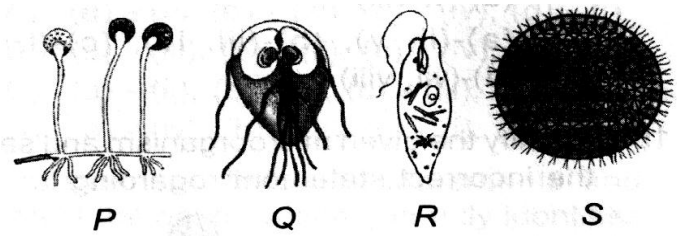
4. The different steps of agricultural practices are given below randomly.
(i) Irrigation (ii) Ploughing (iii) Weeding (iv) Levelling
(v) Harvesting (vi) Fertilisers (vii) Slowing (viii) Crop protection
(ix) Storing seeds
(A) (ii) – (iv) – (vii) – (i) – (vi) – (iii) – (viii) – (v) – (ix)
(B) (iv) – (ii) – (vii) – (i) – (vi) – (iii) – (viii) – (v) – (ix)
(C) (ii) – (vii) – (iv) – (iii) – (i) – (v) – (vi) – (viii) – (ix)
(D) (iv) – (vii) – (i) – (ii) – (iii) – (viii) – (ix) – (v) – (vi)

***Space for Rough Work***

5. The semi-arid plains of a particular region show a pattern of alternating yellow and black stripes on the ground. The yellow stripes consist of land covered by ripening wheat. The black stripes are bare soil on which no crop is grown but farmers use herbicides or tillage to remove any weeds that try to grow in that region.
Which do farmers in this region manage soil in this way?
(A) Farmers put the half of their land to rest for minimising erosion and soil degradation.
(B) Farmers discourage transpiration in the wheat plantation by allowing free evaporation from the soil of the bare stripes.
(C) Farmers try to store some part of one year's rainwater in the soil under the bare stripes and use that water to supplement the rain on wheat crop planted the next year.
(D) All of these

6. Refer to the given passage.
The mosquito P is a carrier of virus that spreads a disease Q. Another mosquito R is a carrier of protozoan S that spreads a disease called T.
Select the option which correctly identifies P, Q, R, S and T.
(A) P-Aedes, Q-Dengue, R-Anopheles, S-plasmodium, T-Malaria
(B) P-Tse tse fly, Q-Dengue, R-Anopheles, S-Plasmodium, T-Malaria
(C) P-Aedes, Q-Dengue, R-Tse tse fly, S-Entamoeba, T-Amoebic dysentery
(D) P-Tse tse fly, Q-Dengue, R-Aedes, S-Entamoeba, T-Amoebic dysentery

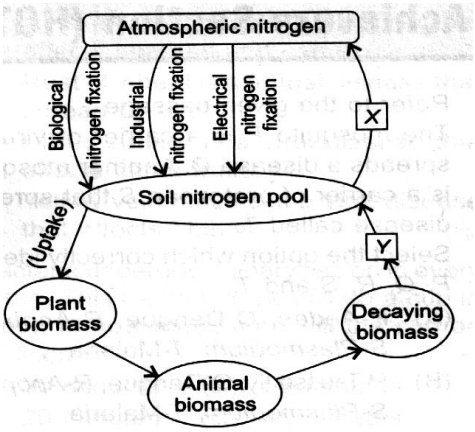
7. Refer to the given figure P, Q, R and S.




Which of the following statements are correct regarding them?
(i) P is the mould from which penicillin in made.
(ii) R is considered as connecting link between plants and animals.
(iii) Q and S are parasites which live in the bodies of other organisms including human beings.
(iv) R and S bear chlorophyll and prepare food is presence of sunlight.
(v) S is colonial form of algae.
(A) (ii), (iv) and (v) only
(B) (i), (ii), (iv) and (v) only
(C) (i), (iii), and (iv) only
(D) (i), (ii), (iii) (iv) and (v)

***Space for Rough Work***

8. Refer to the given outline of $N_2$ cycle.




Identify X and Y and select the correct statement regarding this.

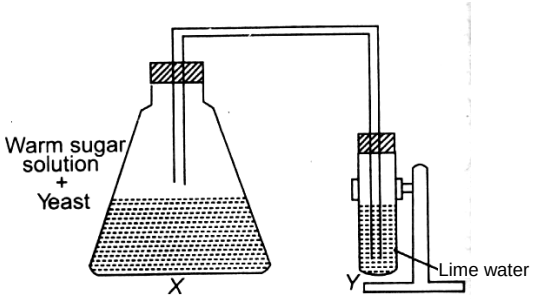
(A) In the process X, protein is converted into ammonia by the action of bacteria while in the process Y nitrates present in the decaying remains get converted into free nitrogen gas.

(B) In the process X, nitrates present in the soil get converted into free nitrogen gas while in the process y, protein in converted into ammonia by the action of bacteria.

(C) Process X represents the conversion of ammonia into nitrates while process Y represents the conversion of nitrates into the free nitrogen gas.

(D) Process X represents the conversion of ammonia into nitrates while process Y represents the conversion of complex organic compound like proteins into ammonia.

9. Refer to the given experimental set up as shown in the given figure and select the correct option regarding it.




(A) In x, years causes fermentation which converts sugar into lactic acid and carbon dioxide.

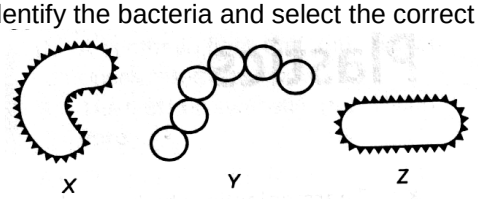
(B) In Y, oxygen gas is released which carbon dioxide gas is absorbed.

(C) In Y, lime water turns milky.

(D) Both (B) and (C)

***Space for Rough Work***

10. Refer to the given figures of bacteria (X, Y and Z) and read the statements (I, ii, and iii) regarding them. Based on the given information, identify the bacteria and select the correct option.




(i) Bacteria X causes cholera.

(ii) Bacteria Y causes a disease which disrupts proper exchange of gasses.

(iii) Bacteria Z converts lactose sugar of milk into lactic acid.

(A) X is Vibrio cholerae. (B) Y is Salmonella typhi

(C) Z is Lactobacillus. (D) Both (A) and (C)

11. Which of the following is a mismatched pair?

(A) World Conservation Union (WCU) – Maintains Red Date Book

(B) Jim Corbett National Park, Uttarakhand – First national park established in India

(C) Western Ghats and Eastern Himalayas – Biodiversity hotspots of India

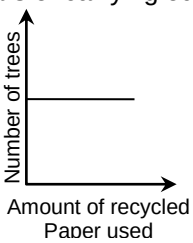
(D) India rhinoceros – An extinct animal

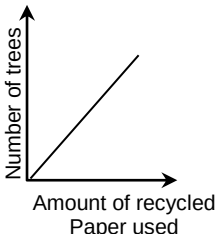
12. Following is the date of four species ($S_1$ – $S_4$) Present (+) or absent (-) in five different habitats (P, Q, R, S and T). Which species has the maximum diversity?

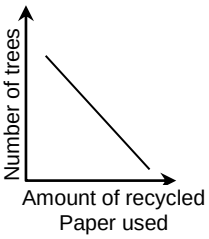
| | P | Q | R | S | T |
|---|---|---|---|---|---|
| $S_1$ | - | - | - | + | + |
| $S_2$ | + | + | + | + | - |
| $S_3$ | - | - | - | - | + |
| $S_4$ | + | - | + | - | + |

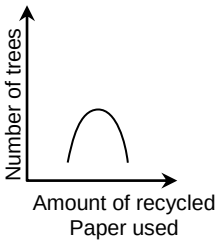
(A) $S_1$ (B) $S_2$ (C) $S_3$ (D) $S_4$

13. Trees take many years to reach maturity. Paper is made from wood pulp. As more people are using recycled paper, fewer trees would be cut down. Which of these graphs shows the result that would be obtained after a few years of carrying out this act of conservation?

(A)



(B)



(C)



(D)



***Space for Rough Work***

14. Read the following statements and select the correct ones.

(i) Hotspots are those specific regions of megabiodiversity nations which have large number of endemic species.

(ii) The Asiatic lion (babbar sher) is endemic to Gir forest in Gujarat.

(iii) increase in atmospheric $CO_2$ concentration due to deforestation does not affect global temperature.

(iv) Silent valley Nation Park is located in the Nilgiri Hills of Tamil Nadu.

(A) (i) and (ii) only (B) (ii) and (iii) only

(C) (i) and (iv) only (D) (i), (ii), (iii) and (iv)

15. Read the given statements and select the option which correctly fill the blanks.

(i) _____ is the first biosphere reserve of India.

(ii) _____ is the number and variety of plants, animals and other organisms that exist.

(iii) Species that no longer exist anywhere on the Earth are called _____ species.

(iv) Cutting down forest and using the land for other purpose is known as _____.

| | (i) | (ii) | (iii) | (iv) |
|---|---|---|---|---|
| (A) | Sunderbans Biosphere Reserve | Species | Endangered | Afforestation |
| (B) | Nilgiri Biosphere Reserve | Biodiversity | Extinct | Deforestation |
| (C) | Nilgiri Biosphere Reserve | Species | Extinct | Afforestation |
| (D) | Sunderbans Biosphere Reserve | Biodiversity | Endangered | Deforestation |