

Time : 03 hrs.

MM-100

- Instructions :
1. All the questions are compulsory.
  2. Avoid cutting and overwriting.
  3. Draw diagrams on requirement.
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- Q1. Answer the following : (1x10=10)
- a) Which force explains attraction between all objects?
  - b) Name two acidic gases.
  - c) Which cell organelle acts as suicidal bag?
  - d) Expand PCRA.
  - e) State any one use of sulphur.
  - f) Which two renewable resources cannot be exhausted?
  - g) 1kgf =.....
  - h) Name the gases released at cathode & anode during electrolysis of water.
  - i) What is the term used for parthenium, grass and chenopodium and how are they treated?
  - j) Unscramble ICLILNIENP.
- Q2. Answer the following : (2x5=10)
- a) What does the cell theory of life states?
  - b) Give two examples of situations in which applied force causes a change in the shape of an object.
  - c) How do micro-organisms help in food industry?
  - d) Tabulate two fractions of petroleum with their boiling point and uses.
  - e) Name any two diseases caused by bacteria and their causative organisms.
- Q3. Answer the following : (3x5=15)
- a) Define 1 Pascal.
  - b) Make a sketch of Rhizopus. Label its parts, also mention how it reproduces. (2+1=3)
  - c) What is rust? State two conditions to prevent rusting? (2+1=3)
  - d) If you are asked to grow wheat and maize, which crop seasons you will choose and why, also differentiate them.
  - e) Classify the following into metals and non-metals:  
carbon, gold, zinc, oxygen, sodium, phosphorus, chlorine, mercury, neon, hydrogen, silver & magnesium
- Q4. Answer the following : (5x5=25)
- a)** What happens when (explain with chemical equations involved)
    - (i) Iron fillings/an iron nail is put in  $\text{CuSO}_4$  solution.
    - (ii) Silicon reacts with dil. HCl
  - b)** Discuss the causes & harmful effects of any two of the following pollutants. (3+2=5)
    - (i) Carbon monoxide
    - (ii) Agriculture wastes
    - (iii)** SPM
  - c)** A girl weighing 50Kg is standing on pencil heels, each having an area of  $1\text{ cm}^2$ . An elephant weighing 2000Kg and foot area of  $250\text{ cm}^2$  is standing on the floor.
    - (i) Calculate the pressure exerted by both of them. (2+2)

(ii) Which of the two exert more pressure on the floor & why? (1)

**d)** You know that friction is useful sometimes and harmful the other time. Consider the situations and explain the role played by friction in each case with reason. (1+1+1+1+1=5)

(i) Aman applies some talcum powder on the common board.

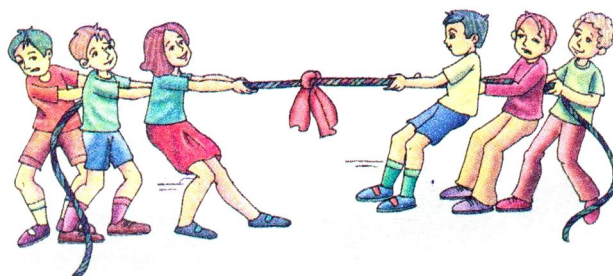
(ii) A driver applies brakes to stop the car.

(iii) Mohit uses a cloth napkin to open a tightly closed lid of a bottle.

(iv) Nidhi applies soap to her hand before removing bangles.

(v) Anita uses luggage fitted with wheels while travelling.

**e)** (i) Identify the game being played in the figure (1)



(ii) a. What will be the net force when force applied by both the teams is in the same direction? Explain. (2)

b. What will be the net force when force applied by both the team is in opposite direction? Explain. (2)

Q5. a) Write difference between: (any four) (2+2+2+2=8)

(i) Manures & Fertilizers

(ii) Contact & non-contact force

(iii) Plant cell & animal cell

(iv) Electrolytes & non-electrolytes

(v) Sliding and rolling friction.

b) Give reason for the following: (any four) (2+2+2+2=8)

(i) Sportsman use shoes with spikes.

(ii) Taj Mahal is turning pale.

(iii) Mountainers suffer from nose bleeding at higher altitudes.

(iv) Plasma membrane is also known as semi-permeable membrane.

(v) Soil is loosened before sowing seeds.

c) Why is nitrogen needed by all living beings? Describe the circulation of  $N_2$  among the biotic & abiotic components of the atmosphere with the help of a flow diagram. (2+3+3=8)

d) Mayank took a five rupee coin and made an attempt to coat it with silver- (0.5+0.5+1+2+2+2=8)

(i) Name the process.

(ii) What should he use as an electrolyte?

(iii) What should he connect to positive & negative terminal of the battery?

(iv) What did he observed after after passing current for about 20 minutes?

(v) Draw a diagram to show the process.

(vi) Mention two more applications of the process.

e) With the help of an activity explain the factors affecting liquid pressure. (1+4+3=8)