SA-I (CLASS-VII) 9/2014

SUBJECT : INTEGRATED SCIENCE

Time : 2½ hrs MM : 80

General Instructions :

i) This paper consists of three section A, B and C.

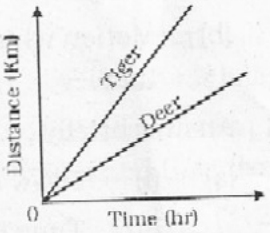
ii) Draw neat and well labelled diagrams wherever required.

iii) Marks are indicated against each question.

SECTION-A (PHYSICS)

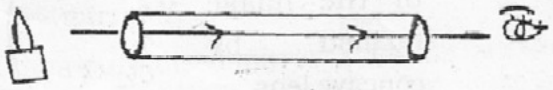
Q1. Answer the following questions in one sentence each : (1x4=4)

(a) The following graph represents the motion of deer and tiger. Who is running faster? Justify your answer.



(b) A plane mirror is placed next to a wall clock that does not have numbers on the dial. The time observed in the image of clock is 3 O'clock. Is the actual time in the clock same? Give reason.

(c) Look at the given figure :



Which property of light is depicted in this figure?

(d) Study the following data of a moving truck

Distance (km)	Time (hr)
50	1
100	2
150	3

Define the type of motion.

Q2. Fill in the blanks : (1x4=4)

(a) The ancient time measuring devices are _____ and _____.

(b) The bouncing back of light after striking a reflecting surface is called _____ of light.

(c) An image formed by a _____ mirror is always of the same size as that of the object.

(d) Motion of a child in a merry-go-round illustrates _____ motion.

Q3. Give one technical term for the following : (1x2=2)

(a) Image that can not be obtained on a screen.

(b) Motion which is repeated after an equal interval of time.

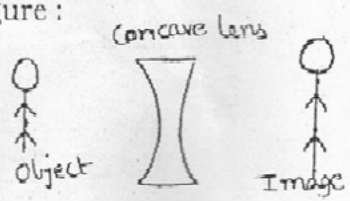
Q4. Answer briefly : (2x3=6)

(a) (i) Draw a well labelled diagram of a pendulum.

(ii) Time taken by the simple pendulum to move from one extreme position to other extreme position is 1 second. What is the time period of the pendulum?

(b) Observe the following figure :

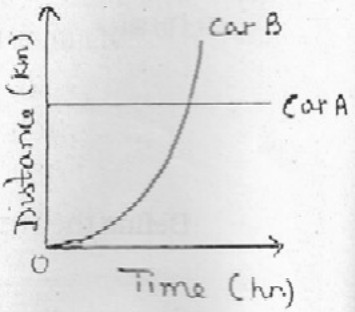
(i) Identify one error in the image formed by concave lens.



(ii) Write the nature of image formed by concave lens.

(c) The following Distance-Time graph represents motion of Car A and Car B.

(i) What is the speed of car A?



(ii) Identify the type of motion of car B.

(iii) Suggest any one way by which road accidents can be reduced.

Q5. Answer the following questions : (3x2=6)

(a) At the start of the journey, the odometer of Aman's car shows a reading 1465km and after 2 hours the reading becomes 1537km. Calculate the speed of his car in km/hr and m/sec.

(b) Amit was standing in front of a plane mirror. The distance between him and the mirror is 3m.

(i) What is the distance between him and his image?

(ii) If he moves 1m forward, then what will be the distance between the mirror and his image?

(iii) Further, if he moves 2m backward, what will be the distance between him and the mirror?

Q6. Answer the following questions : (3+2=5)

(a) Diksha was not able to capture an image formed by spherical mirror 'A' on a screen :

(i) Identify mirror 'A'.

(ii) Draw its diagram.

(iii) Write the nature and size of image formed by mirror 'A'.

(b) Aditya purchased mirror 'X' for his bicycle :

(i) Identify mirror 'X'.

(ii) Give reason for his choice.

SECTION-B (CHEMISTRY)

Q1. Answer in one word or one sentence : (1x4=4)

(a) Name one organic and one inorganic impurity present in sewage.

(b) 'X' is the process of taking out threads from the cocoons for use as silk. Identify 'X'.

(c) What type of sewage disposal system will be suitable for an isolated cluster of four or five houses in an area where there is no sewerage?

(d) What is the role of sorting during the process of formation of wool from fleece?

Q2. Fill in the blanks : (1x4=4)

(a) Vermiprocessing toilets use _____ to treat human waste.

(b) Sheep are _____ to obtain good quality of wool.

(c) Cleaning of water is a process of removing _____ before it enters a water body or is reused.

(d) The disease commonly caused in people working in wool industry is _____.

Q3. Give one technical term for the following : (1x2=2)

(a) The process of rearing and management of silkworms for obtaining silk.

(b) It is a hygienic onsite human waste disposal technology in which excreta from toilet seats flow through covered drains into a biogas-plant.

Q4. Answer briefly : (2x3=6)

(a) Give reason for the following :

(i) The process of shearing does not hurt the sheep.

(ii) Cooking oil, ghee and mayonnaise should not be poured down the drain.

(b) Different varieties of silk are obtained from various type of silkworms. Name four such varieties of silk.

(c) What is sewage? Give the scientific term used for underground pipelines which carry sewage from our homes to the waste water treatment plant.

Q5. Answer the following questions : (3x2=6)

(a) Name the device involved in physical process of waste water treatment plant for the following functions :

(i) Sand, silt and gravel are removed when water is passed through it.

(ii) Light floatable solids (like oil and grease) called scum are removed.

(iii) Larger solid impurities (rags, sticks, cans, plastic etc.) are removed from sewage.

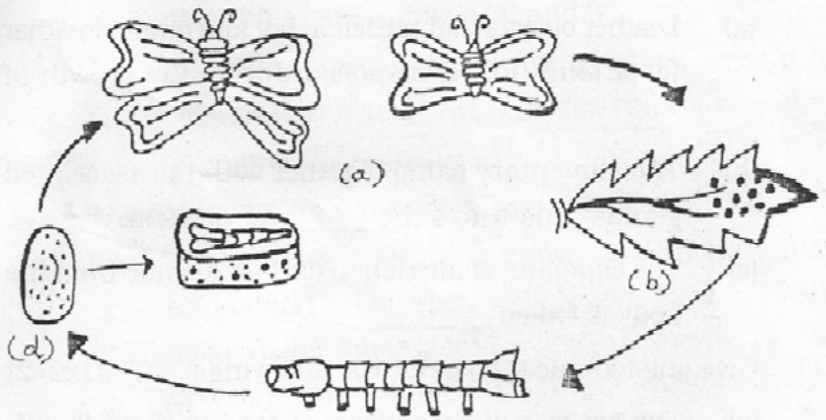
(b) The hair of an animal 'A' are cut from its body along with a thin layer of its skin in the form of 'B'. This process is called 'C'. The 'B' of this animal is then cleaned by using soap and a lot of water by a process 'D'.

(i) What are 'A' and 'B'?

(ii) Name the processes 'C' and 'D'.

(iii) Process 'C' is done during hot weather. Why?

Q6. Study the diagram given below and answer the following questions : (1x5=5)



Life cycle of silkworm

(a) In which stage is the cocoon formed?

(b) (i) In which stage does the silkmoth feed on the plant leaves?

(ii) Enlist any three characteristics of this stage.

SECTION-C (BIOLOGY)

Q1. Answer the following questions in one word or one sentence: (1x4=4)

(a) 'X' is a single celled organism which is used to make wine and beer by the process of anaerobic respiration. Identify 'X'.

(b) Penguin is an animal which lives in extremely cold south polar region of the earth. State two features of penguin which protect it from extreme cold in polar regions.

(c) Nutrients are added regularly to enrich the soil in the fields. Name the three plant nutrients commonly present in fertilisers and manures.

(d) Herbivores are able to digest grass that is rich in cellulose but human beings cannot. Give reason.

Q2. Fill in the blanks : (1x3=3)

(a) Leather objects that are left in hot and humid weather for a long time are spoiled due to the growth of _____.

(b) The alimentary canal together with the associated glands constitutes the _____ system.

(c) The expelling of air rich in carbon dioxide from the body is called _____.

Q3. Give one technical term for the following : (1x2=2)

(a) The process of breakdown of food in the cell with the release of energy.

(b) It is the process by which absorbed substances are transported via the blood vessels to different organs of the body where they are used to build complex substances such as proteins.

Q4. Answer the following questions in brief : (2x3=6)

(a) Ria suffered from a condition in which she passed watery stools frequently.

(i) What is this condition called?

(ii) State any two causes which lead to the above situation.

(b) Give reason :

(i) Insectivorous plants are generally found in the soil which is deficient in nitrogen.

(ii) Lichens is an example of symbiotic relationship.

(c) The two animals 'X' and 'Y' live in tropical rainforests. Animal 'X' is a bird which is adapted to obtain even those fruits from trees which are attached at the end of very thin branches. On the other hand, animal 'Y' is a kind of frog which lives on trees. It has sticky pads on feet so as to climb the trees.

(i) What are animals 'X' and 'Y'?

(ii) Write the adaptation in 'X' which helps it to obtain fruits even from the ends of very thin branches.

Q5. Answer the following questions in detail : (3x2=6)

(a) The polar regions of the earth have an extremely cold climate. The polar bear which lives in north polar regions has adapted well to survive in the severely cold climate. State the significance of following adaptation seen in the polar bear :

(i) layer of fat under its skin -

(ii) strong sense of smell -

(iii) white fur coat -

(b) The leaves of a plant combine a gas 'A' taken from air and a liquid 'B' taken from the soil in the presence

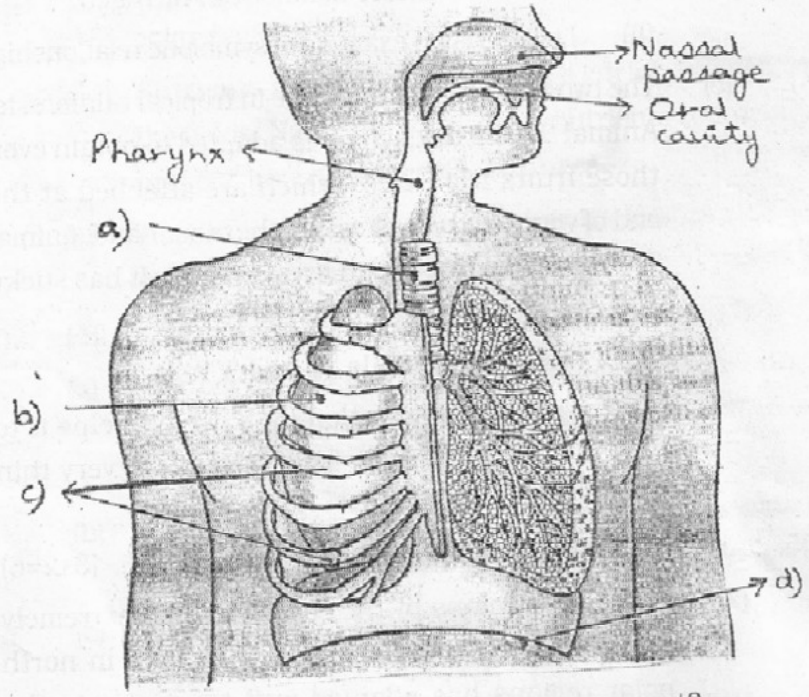
of sunlight to make a simple food 'C' by the process called 'D'. Some of the simple food 'C' gets converted into a food 'E' which is stored in the various parts of the plant including its leaves.

(i) What is gas 'A' and liquid 'B'?

(ii) Name the foods 'C' and 'E'.

(iii) How you can test the presence of 'E' in plants?

Q6. Study the diagram given below and answer the following questions : (1x5=5)



(a) What does the above diagram represent?

(b) Label parts a, b, c and state the function of part d.

(c) List the various steps involved in the process of taking in air rich in oxygen into the body.