

SPECTRA PRACTICE PAPER

SPECTRA CLASSES

CLASS – 7TH

SUBJECT – SCIENCE

TIME – 3 HR.

MM: 80

General Instruction:

1. This question paper consists of 38 questions. All questions are compulsory.
2. This question paper is divided into five Sections - A, B, C, D and E.
3. Section A Question numbers 1 to 18 are multiple choice questions (MCQs) and questions numbers 19 and 20 are Assertion - Reason based questions of 1 mark each.
4. Section B, Question numbers 21 and 25 are very short answer (VSA) type questions. Carrying 2 marks each.
5. Section C, Question numbers 26 and 31 are short answer (SA) type questions. Carrying 3 marks each..
6. Section D, Question numbers 32 and 35 are long answer (LA) type questions. Carrying 5 marks each.
7. Section E, Question numbers 36 and 38 are case-study based integrated question carrying 4 marks each.
9. Draw neat diagrams wherever required. .
10. Use of calculators is NOT allowed.

SECTION - A

1. In a filtration plant water is filtered using layers of
 - (a) Sand and clay
 - (b) Clay and fine gravel
 - (c) Sand and fine gravel
 - (d) sand, fine gravel and medium gravel
2. Stomata controls
 - (a) The loss of energy from the plant
 - (b) the loss of food material from the plant
 - (c) the loss of air from the plant
 - (d) the loss of water from the plant
3. In coastal area, during night wind moves from:
 - (a) Land to sea
 - (b) Wind does blows in any direction
 - (c) Winds move from lower to the higher atmosphere
 - (d) Sea to land
4. Miniature circuit breaker is a small
 - (a) Two way switch
 - (b) magnetic switch
 - (c) fuse
 - (d) electromagnetic switch
5. What are the gases involved in breathing?
 - (a) O₂ and SO₂
 - (b) O₂ and O₃
 - (c) O₂ and NO₂
 - (d) O₂ and CO₂
6. Match the Column I with the Column II and select the CORRECT option.

Column I	Column II
A. Red blood cells	I. Blood group O
B. Universal Donor	II. Systole
C. Heart	III. Haemoglobin
D. Root tissue	IV. Xylem

- (a) A-I, B-II, C-III, D-IV
- (b) A-III, B-I, C-IV, D-II
- (c) A-III, B-I, C-II, D-IV
- (d) A-III, B-IV, C-II, D-I

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7. Kanika noticed that her potted plant was not growing healthily. She put three earthworms into the pot. After a few weeks. She noticed that her plants looked healthier. What could be the possible reason for this?
- The earthworms helped the plant to take in water.
 - The earthworms ate up the pests in the soil.
 - The earthworms allowed the plant to make food faster.
 - The earthworms increased the air and nutrient content of the soil.
8. The finger-like outgrowths of Amoeba help to ingest food. However, the finger-like outgrowths of the human intestine help to
- Make the food soluble.
 - digest the fatty food substances.
 - absorb the digested food.
 - absorb the undigested food.
9. What is peculiar about pulmonary artery and pulmonary vein?
- Both pulmonary artery and vein carry oxygen-rich blood from the lungs to the heart.
 - Pulmonary artery carries oxygen-rich blood and pulmonary vein carries carbon dioxide-rich blood.
 - Pulmonary artery carries carbon dioxide-rich blood and pulmonary vein carries oxygen-rich blood.
 - Both pulmonary artery and vein carry carbon dioxide-rich blood from the heart to the lungs.
10. Speed of a car is 80km/h. How much distance will it cover in 3 hours?
- 80 km
 - 240 km
 - 240 m
 - 160 km
11. Uni sexual flowers are found in
- Sunflower
 - Corn
 - Mustard
 - Pea
12. From the given optical devices, choose that pair which can make real and magnified image with imaginary and magnified image of any object:
- Concave mirror and Concave lens
 - Convex mirror and Convex lens
 - Convex mirror and Concave lens
 - Concave mirror and Convex lens
13. Anaerobic bacteria digest animal waste and produce biogas (change A). The biogas is then burnt as fuel (change B) . The following statements pertain to these change . Choose the correct one:
- A is a chemical change whereas B is a physical change.
 - B is a chemical change whereas A is a physical change.
 - Both A and B are physical changes.
 - Both A and B are chemical changes.
14. Given below from (I) and (iv) are some food items.
- Boiled and mashed potato
 - Glucose solution
 - A slice of bread
 - Mustard oil
- Which of the above will give blue-black colour when tested with iodine?
- (iii) and (iv)
 - (ii) and (iii)
 - (I) and (ii)
 - (I) and (iii)
15. Sodium carbonate is a basic salt because it is salt of :
- Strong acid and weak base
 - Strong acid and strong base
 - Weak acid and weak base
 - Weak acid and strong base
16. Which of the following shows vegetative propagation through roots?
- Ginger
 - Sweet potato
 - Canna
 - Turmeric
17. If we measure the distance in kilometers (km) and the time in hours(h), what will be the unit of speed?
- Hour per kilometres
 - Kilometres per hour
 - Kilometre per second
 - Second per kilometre

18. A circuit diagram is
- a drawing of an electrical circuit with standard symbol for the different electrical components.
 - a drawing of circuit with picture for the different electrical components.
 - Both a picture of a circuit and a drawing of circuit with picture for the different electrical components.
 - A picture of a circuit.
19. Assertion (A) : rainbow can only be seen when you are standing facing towards the sun.
Reason (R) : The sunlight is a mixture of different colours.
- Both A and R are true and R is the correct explanation of A.
 - Both A and R are true and R is not the correct explanation of A.
 - A is true but R is false.
 - A is false but R is true.
20. Assertion (A) : Reena teacher told her that one breath means one inhalation plus one exhalation.
Reason (R) : During breathing inhalation and exhalation takes place simultaneously.
- Both A and R are true and R is the correct explanation of A.
 - Both A and R are true and R is not the correct explanation of A.
 - A is true but R is false.
 - A is false but R is true.

Section –B

This section consists of 5 questions of 2 marks each.

- Explain the relationship between sanitation and disease.
- How do the electric heater or an electric iron work?
- On average, an adult human being rest breathes 15-18 times per minute. The breathing rate, however, may differ under different conditions. Arrange the following activities given in the box in order of increasing breathing rates and give the reason for your answer.
- What happens when iron nails are dipped in copper sulphate solution?
- What is the role of Hydrochloride acid in our stomach ?

Section - C

This section consists of 6 questions of 3 marks each.

26. After learning about the unique construction and use of clinical thermometers in his science class, Rohan became curious about the practical aspects of these devices. He noticed that the thermometer his family uses at home looks different from the ones he saw in textbooks and wondered why clinical thermometers are designed in a specific way for medical purposes.

Why is a clinical thermometer designed differently from home thermometers, and how does its design improve accuracy and safety for medical use?

- What are parasites? Explain by taking the example of cuscuta.
- A farmer was unhappy because of his low crop yield. He discussed the problem with an agricultural scientist and realized the soil of his field was either too acidic or too basic. What remedy would you suggest to the farmer to neutralize the soil?

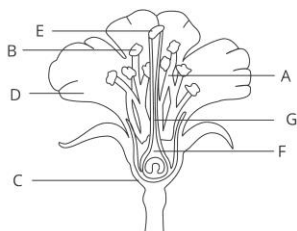
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29. While learning to ride a bicycle Farhan lost his balance and fell. He got bruises on his knees and it started bleeding. However, the bleeding stopped after some time.
- Why did the bleeding stop?
 - What would be the colour of the wounded areas and why ?
 - Which type of blood cells are responsible for the clotting of blood?
30. Sunita takes 15 minutes from her house to reach her school on a bicycle. If the bicycle has a speed of 2m/s, calculate the distance between her house and the school.
31. Explain the interdependence of various components of forests.

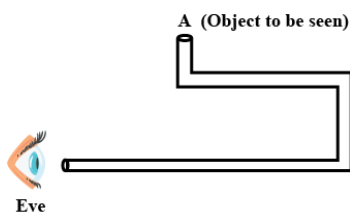
Section - D

This section consists of 4 questions of 5 marks each.

32. Identify the image and answer the following question .
- Label the diagram.
 - Write a note on pistil.



- Describe the process of fertilization in flowering plants .
33. Sana participated in a 400m race competition held at her school and won the race. When she came home she had mixed feelings of joy and pain as she has cramps in her leg muscles . After a massage, she was relieved of the pain. Answer the following questions related to the situation.
- What can be the possible reasons for the pain in her legs?
 - Why did she feel comfortable after a massage?
 - Why do she feel hungry after a heavy physical exercise?
34. (i) Ruminants such as cow and buffaloes swallow their food hurriedly and then sit restfully and chew their food. Can you reason why?
(ii) Explain why , a cow can digest grass but we cannot.
35. Ansh planned activity to observe an object A through pipes as shown in the figure, so that he could see objects which he could not directly see.



- How many mirrors should he use to see the objects?

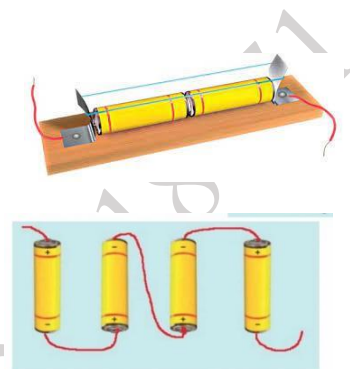
- (b) Indicate the positions of the mirrors in the figure.
- (c) What must be the angle with respect to the incident light at which he should place the mirrors?
- (d) Indicate the direction of the rays in the figure.
- (e) If any of the mirrors is removed, will he be able to see the objects?

Section - E

This section consists of 3 Case - Study Based Questions of 4 marks each.

36. Read the text carefully and answer the questions :

Nikita is watching t.v she suddenly open the remote and see two battery fitted there so she wonder what is the role of these battery and in what pattern they are fitted. Next day she ask her teacher about this. She told her that many devices such as torches, transistors, toys, TV remote controls, use batteries. However, in some of these devices, the electric cells are not always placed one after the other.



(a) In making a battery :

- (i) Positive terminal of one cell is connected to the negative terminal of the next cell.
- (ii) The negative terminal of one cell is connected to the positive terminal of the next cell.
- (iii) The negative terminal of one cell is connected to the negative terminal of the next cell.
- (iv) Positive terminal of one cell is connected to the positive terminal of the next cell.

(b) Where can the key or switch be placed in the circuit?

- (i) Right side of the battery
- (ii) Near the positive terminal of the bulb
- (iii) Can be placed anywhere in the circuit
- (iv) Left side of the battery

(c) When the switch is in the 'ON' position, the electric circuit is said to be

- (i) Complete (ii) Both close and complete (c) closed (d) open

(d) A combination of two or more cells is called a

37. Read the text carefully and answer the questions :

Treatment of wastewater involves physical, chemical, and biological , which remove physical, chemical and biological matter that contaminates the wastewater .

(a) Suspended impurities contained by sewage are called

- (i) Contaminates (b) sludge (c) Black water (d) grey water



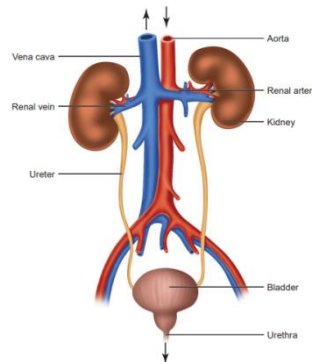
(b) Sludge in separate tanks is decomposed to get biogas by
(i) Anaerobic bacteria (ii) yeasts (iii) aerobic bacteria (iv) Algae

(c) Which portion of WWTP retains large objects like rags, sticks, etc.?
(i) Sedimentation tank (b) Sewerage (c) Sludge (d) Bar screen

(d) Activated sludge mainly contains water and

38. Read the text carefully and answer the questions :

Soniya knows that carbon dioxide is removed as waste from the body through the lungs during exhalation. The undigested food is removed during egestion. She want to know how the other waste materials are removed from the body. Where these unwanted materials come from. She understood this by the following diagram.



(a) The muscular tube through which stored urine is passed out of the body is called
(i) Urethra (b) Urinary bladder (c) Ureter (d) kidney

(b) When the blood reaches the two kidneys, it contains both useful and harmful substances. The useful substances are

(i) Excreted outside (ii) absorb back (iii) Remain in kidney (iv) All of these

(c) The process of removal of waste materials from the body is called

(a) Digestion (b) Excretion (c) Inhalation (d) Respiration

(d) The urine consists of 95% water,urea and 2.5% other waste products.
