SUMMATIVE ASSESSMENT – I (2011)

Class – IX / कक्षा – IX

General Instructions:
(i) The question paper comprises of two sections, A and B. You are to attempt both the sections.
(ii) All questions are compulsory.
(iii) There is no overall choice. However, internal choice has been provided in all the five questions of five marks category. Only one option in such questions is to be attempted.
(iv) All questions of section A and all questions of section B are to be attempted separately.
(v) Questions 1 to 3 in section A are one mark questions. These are to be answered in one word or in one sentence.
(vi) Questions 4 to 7 in section A are two marks questions. These are to be answered in about 30 words each.
(vii) Questions 8 to 19 in section A are three marks questions. These are to be answered in about 50 words each.
(viii) Questions 20 to 24 in section A are five marks questions. These are to be answered in about 70 words each.
(ix) Questions 25 to 42 in section B are multiple choice questions based on practical skills. Each question is a one mark question. You are to select one most appropriate response out of the four provided to you.

सामान्य निर्देश:
(i) इस प्रश्न पत्र को दो भागों, भाग अ और भाग ब में बांटा गया है। आपको दोनों भागों के प्रश्नों के उत्तर लिखने हैं।
(ii) सभी प्रश्न अनििय्य हैं।
(iii) पूरे प्रश्न पत्र पर कोई चयन प्राप्त नहीं हैं परन्तु पाँच–पाँच अंकों के पाँच प्रश्नों में भीतरी चयन दिया गया है। इन प्रश्नों में आप केवल एक भीतरी चयन को उत्तर लिखने के लिए चुन सकते हैं।
(iv) आपको भाग अ और भाग ब के सभी प्रश्नों के उत्तर पुष्पक–पुष्पक लिखने होंगे।
(v) भाग अ के प्रश्न संख्या 1 से 3 के प्रश्न एक–एक अंक के हैं। इनके उत्तर एक शब्द अथवा एक वाक्य में दें।
Section A

1. An unlit incense stick (agarbatti) gives smell only when we come close to it but on lighting the stick we get smell even far away from it, why?

2. If the mass of a body is doubled what will happen to its acceleration, if the applied force remains constant?

3. Name the processes by which \( \text{CO}_2 \) and \( \text{H}_2\text{O} \) move into and out of a cell?

4. Tabulate any two differences between mixtures and compounds.

5. Mention any two phenomena which can be successfully explained on the basis of Universal law of gravitation.

6. What is meant by endocytosis? Name an organism which uses this process.

7. Mention two functions of stomata.

8. The following triangle exhibits inter-conversion of the three states of matter. Complete the triangle by labelling the arrows marked A, B, C and D. Out of the four processes A, B, C and D select any one in which heat is (i) absorbed, (ii) evolved.
9. (a) Draw a labeled diagram of the apparatus used to separate a mixture of oil and water. Write name of this apparatus.
(b) State any two other applications of the technique used in this apparatus.

10. A particle moves 3m north, then 4m east and finally 6m south. Calculate the displacement.
    Also calculate the distance travelled by the particle?

11. (a) Give reasons for the following.
    
    (i) It is advised to tie the luggage kept on the roof of a bus with a rope.

    (ii) A gun recoils after it is fired.

    (b) Define momentum of an object.
12. What happens to the gravitational force between two objects when the:
(a) mass of one object is doubled.
(b) distance between the objects is tripled.
(c) masses of both objects are doubled and the distance between them is tripled.

Do pîsâodô kô bîch lâgô guulîkârson bûl kô nîhûta hû, jhû:
(a) kîsî eûk pîsâod kô drôvyman dô gûnû kîyâ jâta hû,  
(b) dônoû pîsâodô kô bîch kô ûrû tîn gûnî kô jâta hû,  
(c) dônoû pîsâodô kô drôvyman dô gûnû Ôdû nûkô bîch kô ûrû tîn gûnî kô jâta hû.

13. State the action and reaction in the following:
(a) moving rocket
(b) firing of a bullet from a gun
(c) a person walking on the floor.

Nîmnlîkbô pûkrônô mô kîyâ tûkha prâtikrîyâ kô ûltûk kô jîbê:
(a) rûkêt kô gûti kôrûa
(b) bûnûkû sê gûlî dûgàña
(c) yûkît kô sàdkû pûr chûnã

14. (a) What is meant by acceleration due to gravity?
(b) Planet Venus has radius one half of the Earth and mass 1/9th of the Earth. Find the value of g on the surface of Venus. (given, value of g on surface of Earth = 9.8 m/s²)

(a) guulîkô tîrôn sê nîhû tûkhpîr hû?
(b) shûkro gvrh kô tîrônû pûshî kô kînîyâ kô âaûûhî tûkha îska drôvyman pûshî kô drôvyman kô 1/9 gûnû hû. shûkro gvrh kô pûsh pûr guulîkô tîrôn g kô máû nîhût kôjîjê. (pûshî kô pûsh pûr g = 9.8 m/s²)

15. (a) Draw the adipose connective tissue.
(b) Mention one region in the body where this tissue is present and state one function of
16. (a) Draw a labelled diagram of a neuron. (Two labellings)
(b) Identify the tissue which is made up of these cells.
(c) Name one organ that is made of this tissue.

(a) न्यूरोन का नामांकित चित्र (कोई तीन नामांकन) खींचिए।
(b) इन कोशिकाओं से बने ऊतक की पहचान कीजिए।
(c) इन ऊतकों से बने किसी एक अंग का नाम लिखिए।

17. Describe the structure and write any two functions of the Golgi apparatus.

गॉल्जी उपकरण की संरचना का वर्णन कीजिए तथा इसके कोई दो कार्य लिखिए।

18. (a) What are macronutrients? Why are they called macronutrients?
(b) From where do plants acquire the following nutrients:
   (i) Nitrogen
   (ii) Hydrogen

(a) बृहत् पोषक क्या हैं और इनें बृहत् पोषक क्यों कहते हैं?
(b) पादप निन्मलिखित पोषक कहाँ से प्राप्त करते हैं:
   (i) नाइट्रोजन
   (ii) हाइड्रोजन

19. Why should fertilisers be applied in proper dose and at proper time?

उर्फरकों का उपयोग उचित समय व उचित मात्रा में किया करना चाहिए?

20. Name and describe the method used for separating the components present in a sample of ink. List its any two applications.

किसी स्पष्टीकरण के नमूने में उपस्थित अवयवों को पृथक करने की विधि का नाम तथा उसका वर्णन कीजिए। इस विधि के किन्हीं दो अनुप्रयोगों की सूची बनाए।

OR
21. (a) Differentiate between three states of matter on the basis of following properties.
   (i) intermolecular forces. (ii) Arrangement of molecules.
(b) Liquids generally have lower density compared to solids. But you must have observed that ice floats on water. Give reason.
(a) नीचे दिए गए पूर्वों पर आधारित पदार्थ तीनों अवस्थाओं में अंतर लिखिए:
   (i) अंतराभाव का बल (ii) अणूओं की व्यवस्था
(b) सामान्यतः ठोस पदार्थों की अनुभूति पदार्थ का घनत्व कम होता है। लेकिन आपने बर्फ के तुकड़ों को जल में रखते हुए देखा होगा। कारण लिखिए।

   OR

(a) What temperature in Kelvin scale is equal to 50°C?
(b) Describe an activity to show that rate of evaporation increases with surface area.
(c) State two differences between evaporation and boiling.
(a) 50°C तापमान को केल्विन पैमाने में रूपांतरित कीजिए।
(b) एक क्रियाकलाप द्वारा व्यक्तिकं कीजिए कि किस प्रकार सतही क्षेत्र बढ़ने पर वाष्पीकरण की दर भी बढ़ाती है।
(c) वाष्पीकरण तथा क्षण में ने अंतर लिखिए।

22. (a) What happens to a person travelling in a bus when the bus takes a sharp turn? Give reason.
(b) A cricketer moves his hands backwards on catching a fast moving ball. Why?
(c) A bullet of mass 0.02 kg is fired by a gun of mass 20 kg. If the speed of the bullet is 150 ms$^{-1}$, calculate the recoil speed of the gun?
(b) If the mass of a body is doubled, what happens to its acceleration when acted upon by the same force? Justify your answer.

(b) It is easier to stop a tennis ball than a cricket ball moving with the same speed. Why?

(c) A girl of mass 40 kg jumps with a horizontal velocity of 5 m/s\(^{-1}\) on to a stationary cart with frictionless wheels. The mass of the cart is 10 kg. Find her velocity as the cart starts moving. Assume that there is no external unbalanced force working in the horizontal direction.

(a) यदि किसी वस्तु का द्वारा घुमती हो जाए और उस पर आयोपित बल बही रहे तो उस वस्तु के त्वरण का क्या होगा? अपने उत्तर की पुष्टि कीजिए।

(b) समान बल से गतिमान विक्रेट की गेंद की तुलना में टेनिस की गेंद को रोकना आसान होता है। क्यों?

(c) 40 kg द्वारा कोई लड़की घरेलू क्षेत्र में वाली किसी रुकी हुई गाड़ी पर 5 m/s\(^{-1}\) के शैतंज लगे बल से कूदती है। गाड़ी का द्वारा 10 kg है। गाड़ी के चलने पर लड़की का बल ज्ञात कीजिए। यह मानिए कि शैतंज दिशा में कोई बाह्य असमूचत बल कार्य नहीं कर रहा है।

23. List two differences in tabular form between speed and velocity. When is a body said to have:

(a) uniform velocity and

(b) variable velocity.

How is the average velocity of a body calculated when its velocity changes at a non-uniform rate?

सारणी के रूप में चाल तथा बेग में दो अन्तर लिखिए। किसी वस्तु को कब

(a) एकसमान बेग,

(b) परिवर्ती बेग से गतिमान कहा जाता है?

जब कोई वस्तु असमान दर से अपने बेग में परिवर्तन करती है तो उसका औसत बेग कैसे परिकलित किया जाता है?

OR

A train starting from rest, pick up a speed of 10 m/s in 100 s. It continues to move at the same speed for the next 250 s. It is then brought to rest in the next 50 s. Plot a speed - time graph for
(i) acceleration of the train while accelerating,

(ii) retardation of the train while retarding, and

(iii) the total distance covered by the train.

24. Mention the different methods of growing crops to get maximum produce. Give one example of each method. List the factors which are taken into consideration while deciding the choice of crops for each method.

OR

Differentiate between capture fishing and culture fishery. Explain the advantage of composite fish culture with example. State the problems faced on adopting composite fish culture and also the solution found to solve it.

Section B

25. A student was asked to mix the white of an egg with water and stir well. The student observed that

(a) a transparent solution is formed.
(b) a translucent mixture is formed.
(c) egg white settles down at the bottom.
(d) egg white floats on the surface.

26. If common salt is added to an unsaturated solution of common salt in water it will

(a) become a colloid
(b) become a suspension
27. Which is the correct colour sequence of iron filings, sulphur and iron sulphide?

(a) Greyish black, yellow, black
(b) Black, yellow, brown
(c) Brown, yellow, black
(d) Black, yellow, greyish black

28. When barium chloride solution is mixed with sodium sulphate solution

(a) a white precipitate is formed instantaneously
(b) a white precipitate is formed only after some time
(c) a yellow precipitate is formed instantaneously
(d) a yellow precipitate is formed

29. A student heats some water in a round bottomed flask for determining its boiling point. He keeps on recording its thermometer readings. On the basis of his observation he would
conclude that the temperature of water:

(a) keeps on increasing regularly.
(b) keeps on increasing irregularly.
(c) first increases slowly, then rapidly and eventually becomes constant.
(d) first increases rapidly, then slowly and finally becomes constant.

30. A student made a list of following four precautions for the experiment on determination of melting point of ice. The incorrect precaution is:
(a) The bulb of the thermometer should be kept surrounded with crushed ice.
(b) Ice should be stirred regularly.
(c) A small quantity of common salt should be added to the crushed ice to avoid quick melting.
(d) The temperature should be recorded keeping the eye in the level of mercury.

31. The sequence commonly followed for separating a mixture of sand, common salt and ammonium chloride is:
(A) use of magnet, dissolving in water, filtration, sublimation
(B) dissolving in water, filtration, evaporation, sublimation
32. The reaction of iron and sulphur to form iron sulphide takes place at:

(a) at high temperature  
(b) in the presence of a catalyst  
(c) at moderate temperature  
(d) in the presence of an acid

आयरन सल्फाइड बनाने के लिए आयरन और सल्फर के बीच रासायनिक अभिक्रिया होगी:

(a) उच्च ताप पर।  
(b) उत्पन्नक की उपस्थिति में।  
(c) मध्यम ताप पर।  
(d) अन्य की उपस्थिति में।

33. Four students used different ways of burning a magnesium ribbon as shown by figure I to IV.

The correct way has been followed by student:

(a) I  
(b) II  
(c) III  
(d) IV

जैसा कि नीचे चित्रों से दर्शाया गया है चार विद्यार्थियों ने मैग्नीशियम रिबन को जलाने के लिए अलग विधि अनन्यी।
34. The colour of the pure ammonium chloride powder is:
(a) White  (b) Blue  (c) Green  (d) Red

शूद्र अम्लों चिल्ड का रंग होता है:
(a) सफेद  (b) नीला  (c) हरा  (d) लाल

35. Raisins swell up after being placed them in a beaker containing water for sometime because.
(a) Water inside the raisins exits when placed in a beaker of water.
(b) The concentration of water in the cell sap is the same as that of water in the beaker.
(c) The concentration of water in the cell sap is higher than that of water in the beaker.
(d) The concentration of water in the cell sap is lesser than that of water in the beaker.

किसी बीज-म रखे तानो में किश्चिम रखने पर कुछ भर म है तथा फूल जाते है क्योंकि -
(a) जब किश्चिमों को पानी म रखा जाता है तो इनके अंदर का पानी बाहर निकल जाता है।
(b) कोशिका म स्थान जल की सांद्रता और बाह्य जल की सांद्रता बराबर होती है।
(c) कोशिका के अन्दर जल की सांद्रता बाह्य जल की सांद्रता से अधिक होती है।
(d) कोशिका के अन्दर जल की सांद्रता बाह्य जल की सांद्रता से कम होती है।

36. Which one the following diagram depicts the structure of onion peel?

The correct answer is:
(a) A  (b) B  (c) C  (d) D

निन्म में से कौन सा चित्र प्याज की झिल्ली की सरंचना को प्रदर्शित करता है?
37. A student accidentally spilled a few drops of a solution over the shirt, the area became blue black because the solution was:
   (a) potassium dichromate which oxidized the piece of shirt.
   (b) HCl which reacted with metanil yellow pigment of the shirt.
   (c) iodine which reacted with the starched part of the shirt.
   (d) an acid which burnt the patch of the shirt.

38. Metanil yellow is an adulterant of:
   (a) cereals
   (b) milk products
   (c) turmeric powder
   (d) pulses

39. Animal cells are commonly stained with:
   (a) methylene blue
   (b) acetocarmine
   (c) safranin
   (d) iodine solution

40. Raj observed nerve cells under the microscope and made the following sketch. The mistake in his drawing is, cyton with
41. A student soaked 10 g raisins in 75 mL of distilled water in two beakers A and B. He maintained beaker A at 20°C and beaker B at 40°C. After an hour, the percentage of water absorbed will be:
   (a) same in beaker A and B
   (b) more in A than in B
   (c) more in B than in A
   (d) twice as much in B as in A

एक विद्यार्थी ने 10 ग्राम अमलित 75 मिलीलीटर जल में दो बीकरों A और B में भिजाया। बीकर A को उसने 20°C के तापमान पर रखा और बीकर B को 40°C पर रखा। 1 घंटे के बाद अवशोषित जल की प्रतिशत मात्रा होगी —
   (a) A और B में एक समान
   (b) A में B से अधिक
   (c) B में A से अधिक
   (d) B में A से दोगुनी

42. A student observed the empty spaces in slide of sclerenchyma. It shows

(a) Protoplasm is dead at maturity
(b) Intercellular spaces
(c) Cytoplasm is thin
(d) Lumen in cell

एक विद्यार्थी ने स्क्लेरेंकाइमा की एक स्लाइड में रिक्त स्थान प्रकट किया। इससे ज्ञात होता है :
(a) आयु बढ़ने पर कोशिका द्रव्य मृत है।
(b) इसमें अंतरकोशिका स्थान है।
(c) कोशिका द्रव्य पतला है।
(d) कोशिका में ल्यूमेन है।