



# TECHNO INDIA GROUP PUBLIC SCHOOL

## MOCK TEST-III

### CLASS-X

Q.P. Code **086**

Roll No.

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Candidates must write the code on the title page of the answer-book.

- Please check that this question paper contains 14 printed pages.
- QP Code given on the right hand side of the question paper should be written on the title page of the answer-book by the candidate.
- Please check that this question paper contains 39 questions.
- Please write down the Serial Number of the question before attempting it.
- 15 minutes time has been allotted to read this question paper.

## SCIENCE

*Time allowed : 3 hours*

*Maximum Marks : 80*

### General Instruction:

- (i) This question paper consists of 39 questions in 3 sections. Section A is Biology, Section B is Chemistry and Section C is Physics.
- (ii) All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.

**SECTION : A**

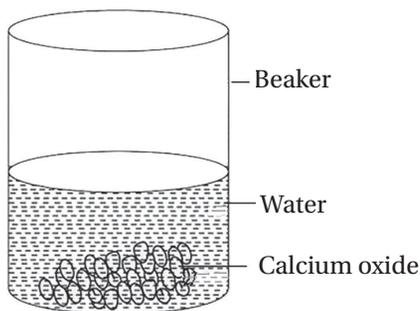
1.	The correct sequence for anaerobic respiration in yeast is (A) Glucose $\xrightarrow{\text{Cytoplasm}}$ Pyruvate $\xrightarrow{\text{Mitochondria}}$ Ethanol + Carbondioxide (B) Glucose $\xrightarrow{\text{Cytoplasm}}$ Pyruvate $\xrightarrow{\text{Cytoplasm}}$ Lactic acid (C) Glucose $\xrightarrow{\text{Cytoplasm}}$ Pyruvate $\xrightarrow{\text{Mitochondria}}$ Lactic acid (D) Glucose $\xrightarrow{\text{Cytoplasm}}$ Pyruvate $\xrightarrow{\text{Cytoplasm}}$ Ethanol + Carbondioxide	[1]
2.	Choose the event that does not occur in photosynthesis. (A) Absorption of light energy by chlorophyll      (B) Reduction of CO <sub>2</sub> to carbohydrates (C) Oxidation of carbon to CO <sub>2</sub> (D) Conversion of light energy to chemical energy	[1]
3.	<i>Mimosa pudica</i> shows an example of _____ when touched. (A) Chemotropism      (B) Phototropism      (C) Geotropism      (D) Nastic movement	[1]
4.	Organisms cannot depend on being cut or broken into pieces for reproduction. Which of the methods given below is not a true mode of reproduction? (A) Regeneration      (B) Fragmentation      (C) Fission      (D) Budding	[1]
5.	In human males, all the chromosomes are paired perfectly, except one. This/these unpaired chromosome is/are (i) large chromosome      (ii) small chromosome      (iii) Y-chromosome      (iv) X-chromosome (A) (i) and (ii)      (B) (iii) only      (C) (iii) and (iv)      (D) (ii) and (iv)	[1]
6.	Oldest form of garbage disposal is— (A) incineration      (B) recycling      (C) landfills      (D) composting	[1]
7.	Select the mismatched pairs in the following: (A) Biomagnification — Increased accumulation of chemicals at the successive trophic levels of a food chain. (B) Ecosystem — Biotic components of environment. (C) Aquarium — Man made ecosystem. (D) Parasites — Organisms which obtain food from other living organisms.	[1]
<b>Assertion and Reason :</b>		
<b>Directions:</b> The following two questions consist of two statements - Assertion and Reason (R). Answer these questions by selecting the appropriate option given below :		
A : Both A and R are true, and R is the correct explanation of A.		
B : Both A and R are true, and R is not the correct explanation of A.		
C : A is true but R is false		
D : A is false but R is true.		
8.	<b>Assertion (A):</b> If a sperm bearing Y-chromosome fertilises an egg, the child born will not be exactly identical to his father. <b>Reason (R):</b> There are equal chances to have a boy or a girl for a couple. (A) A                      (B) B                      (C) C                      (D) D	[1]



## SECTION B

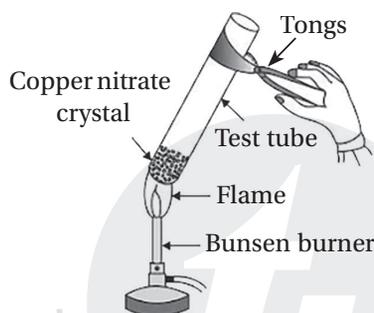
<b>SECTION B</b>												
17.	Two salts 'X' and 'Y' are dissolved in water separately. When a universal indicator is added to these two solutions, the solution 'X' turns pink and the solution 'Y' turns green in colour. Which one of the following options is correct?  <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">'X'</td> <td style="text-align: center;">'Y'</td> </tr> <tr> <td>(A) CH<sub>3</sub>COOH</td> <td>Na<sub>2</sub>CO<sub>3</sub></td> </tr> <tr> <td>(B) K<sub>2</sub>CO<sub>3</sub></td> <td>NaCl</td> </tr> <tr> <td>(C) NaCl</td> <td>CH<sub>3</sub>COONa</td> </tr> <tr> <td>(D) Na<sub>2</sub>CO<sub>3</sub></td> <td>K<sub>2</sub>CO<sub>3</sub></td> </tr> </table>	'X'	'Y'	(A) CH <sub>3</sub> COOH	Na <sub>2</sub> CO <sub>3</sub>	(B) K <sub>2</sub> CO <sub>3</sub>	NaCl	(C) NaCl	CH <sub>3</sub> COONa	(D) Na <sub>2</sub> CO <sub>3</sub>	K <sub>2</sub> CO <sub>3</sub>	[1]
'X'	'Y'											
(A) CH <sub>3</sub> COOH	Na <sub>2</sub> CO <sub>3</sub>											
(B) K <sub>2</sub> CO <sub>3</sub>	NaCl											
(C) NaCl	CH <sub>3</sub> COONa											
(D) Na <sub>2</sub> CO <sub>3</sub>	K <sub>2</sub> CO <sub>3</sub>											
18.	An element 'M' has atomic number 6(2, 4)—Which of the following will be the formula and nature of its chloride?  <table style="width: 100%; border: none;"> <tr> <td>(A) MCl<sub>4</sub>, ionic</td> <td>(B) MCl<sub>4</sub>, covalent</td> </tr> <tr> <td>(C) M<sub>4</sub>Cl, covalent</td> <td>(D) M<sub>4</sub>Cl, ionic</td> </tr> </table>	(A) MCl <sub>4</sub> , ionic	(B) MCl <sub>4</sub> , covalent	(C) M <sub>4</sub> Cl, covalent	(D) M <sub>4</sub> Cl, ionic	[1]						
(A) MCl <sub>4</sub> , ionic	(B) MCl <sub>4</sub> , covalent											
(C) M <sub>4</sub> Cl, covalent	(D) M <sub>4</sub> Cl, ionic											
19.	The colour of the solution observed after 30 minutes of placing zinc metal to copper sulphate solution is  <table style="width: 100%; border: none;"> <tr> <td>(A) Blue</td> <td>(B) Colourless</td> <td>(C) Dirty green</td> <td>(D) Reddish brown</td> </tr> </table>	(A) Blue	(B) Colourless	(C) Dirty green	(D) Reddish brown	[1]						
(A) Blue	(B) Colourless	(C) Dirty green	(D) Reddish brown									
20.	On adding dilute sulphuric acid to a test tube containing a metal 'X', a colourless gas is produced when a burning match stick is brought near it. Which of the following correctly represents metal 'X'?  <table style="width: 100%; border: none;"> <tr> <td>(A) sodium</td> <td>(B) sulphur</td> <td>(C) copper</td> <td>(D) silver</td> </tr> </table>	(A) sodium	(B) sulphur	(C) copper	(D) silver	[1]						
(A) sodium	(B) sulphur	(C) copper	(D) silver									
21.	Mild non-corrosive basic salt is  <table style="width: 100%; border: none;"> <tr> <td>(A) Ca(OH)<sub>2</sub></td> <td>(B) NaCl</td> <td>(C) NaOH</td> <td>(D) NaHCO<sub>3</sub></td> </tr> </table>	(A) Ca(OH) <sub>2</sub>	(B) NaCl	(C) NaOH	(D) NaHCO <sub>3</sub>	[1]						
(A) Ca(OH) <sub>2</sub>	(B) NaCl	(C) NaOH	(D) NaHCO <sub>3</sub>									
22.	An element 'M' has 50% of the electrons filled in the 3 <sup>rd</sup> shell as in the 2 <sup>nd</sup> shell. The atomic number of 'M' is  <table style="width: 100%; border: none;"> <tr> <td>(A) 10</td> <td>(B) 12</td> <td>(C) 14</td> <td>(D) 18</td> </tr> </table>	(A) 10	(B) 12	(C) 14	(D) 18	[1]						
(A) 10	(B) 12	(C) 14	(D) 18									
23.	An element with atomic numbers _____ will form a basic oxide.  <table style="width: 100%; border: none;"> <tr> <td>(A) 7</td> <td>(B) 17</td> <td>(C) 14</td> <td>(D) 11</td> </tr> </table>	(A) 7	(B) 17	(C) 14	(D) 11	[1]						
(A) 7	(B) 17	(C) 14	(D) 11									
<b>■ Assertion—Reason Type Questions (Q24)</b>												
<b>Directions:</b> Read the following questions and choose any one of the following four responses. a: Assertion and Reason both are correct and Reason is the correct explanation of Assertion. b: Assertion and Reason both are correct and Reason is not the correct explanation of Assertion. c: Assertion is correct but Reason is wrong. d: Assertion is wrong but Reason is correct.												
24.	<b>Assertion :</b> Rusting of iron is endothermic in nature.  <b>Reason :</b> As the reaction is slow, the release of heat is barely evident.  <table style="width: 100%; border: none;"> <tr> <td>(A) a</td> <td>(B) b</td> <td>(C) c</td> <td>(D) d</td> </tr> </table>	(A) a	(B) b	(C) c	(D) d	[1]						
(A) a	(B) b	(C) c	(D) d									
25.	The industrial process used for the manufacture of caustic soda involves electrolysis of an aqueous solution of compound 'X'. In this process, two gases 'Y' and 'Z' are liberated. 'Y' is liberated at cathode and 'Z', which is liberated at anode, on treatment with dry slaked lime forms a compound B. Name X, Y, Z and B.	[2]										

26. Sital took solid quick lime in a beaker and added water to it.



- (a) What type sound would she hear?  
 (b) State the type of reaction it is and write the chemical equation.

OR



- (a) What is the colour of copper nitrate crystals before heating and after heating? Write chemical reaction involved.  
 (b) Identify the gases formed.  
 (c) Write the chemical name and chemical formula of two salts which contain water of crystallisation.

27. Write balanced equations for the reactions of

- (a) Aluminium when heated in air.  
 (b) Iron reacts with steam. Name the product obtained.  
 (c) Calcium reacts with water. Why does calcium start floating in water?

28. The metal sodium reacts with air and water.

A student reacted sodium with water and measured the volume of gas at intervals of 30 secs. The results are shown below:

Time (s)	0	30	60	90	120	150	180
Volume (cm <sup>3</sup> )	0	40	60	74	86	96	140

- (a) Upto what time the reaction was fastest  
 (i) 30 s                      (ii) 60 s                      (iii) 90 s  
 Justify your answer.  
 (b) What will be the colour of universal indicator in the solution formed? Write balanced chemical reaction  
 OR  
 (i) Which gas is liberated in the above reaction?  
 (ii) Which ions are responsible for basic nature of NaOH?

	(c) What will be the colour of phenolphthalein in the solution formed? (i) Yellow                      (ii) Red                                      (iii) Colourless                                      (iv) Pink Justify your answer.	
29.	(a) Why does carbon form compounds mainly by covalent bonding? (b) State any two reasons for carbon forming a large number of compounds? (c) Identify the compound which contains aldehyde as its functional group and write its structural formulae.  OR (a) Define the term isomerism. (b) Two compounds have same molecular formula $C_2H_6O$ . Write the names of the functional group and then formula. (c) Write the structural formula of Benzene.	[5]

**SECTION: C**

30.	If length of a conductor be double of its initial length, its resistivity will be (A) double                      (B) half                                      (C) remain same                                      (D) four times	[1]
31.	Focal length of a convex lens is 20 cm. its power will be (A) -5D                                      (B) -10 D                                      (C) 5D                                      (D) 10 D	[1]
32.	Unit of magnetic field is (A) watt                                      (B) Tesla                                      (C) weber                                      (D) Joule	[1]
33.	Find the resistance of a 1000 W toaster working at 250 v.	[2]
34.	The refractive index of diamond is 2.5 find velocity of light in diamond.	[2]
35.	State and explain with diagram the direction of force that acts on a current carrying conductor placed in a magnetic field.	[3]
36.	A convex lens of focal length 20 cm. forms an image of an object placed at 40 cm from it. Calculate (i) position of the image (ii) Magnification (iii) Nature and size of the image.	[3]
37.	An electric heater works at 220 v and has a power rating of 1100 W it is used for 2 hours daily for 15 days. (A) current drawn by heater                                      (B) Resistance of the heater (C) total electrical energy consumed                                      (D) find the cost of energy if cost of 1 unit is Rs. 5.	[4]
38.	A person has a near point at 75 cm. instead of 25 cm, to correction of the problems - calculate - (A) The power of the lens required                                      (B) The type of the lens used (C) Focal length of the lens                                      (D) The defect of vision	[4]
39.	A straight current carrying conductor of length 15 cm. is placed in a magnetic field of 0.4 T. A current of 5A flows through it, and the conductor is perpendicular to the field - Calculate - (i) force acting on conductor (ii) The new force if current becomes double (iii) The new force if conductor makes angle $60^\circ$ with the magnetic field. (i) Is the force depend on the medium in which conductor is placed.	[4]