



GUJARAT SECONDARY & HIGHER SECONDARY EDUCATION BOARD, GANDHINAGAR

For Academic Year : 2020-21
STANDARD - 10 : SCIENCE

Annual Examination

Time : 3 Hours

PAPER STYLE

Total Marks : 80

Note : This paper style is for the guidance of students, teachers, paper setters and moderators. Paper setters and moderators are allowed to change the structure of the question paper in accordance with the core objectives of the subjects of secondary and higher secondary education.

Weightage as per Objectives :

Objective	Knowledge	Under - standing	Application	Synthesis and Analysis	Interpretation and Evaluation	Total
Marks	20	28	24	04	04	80
Percentage %	25	35	30	05	05	100

Weightage as per type of questions :

No.	Type of Questions	Number of Questions		Total Marks
		Without general option	With general option	
1.	Objective Type (O)	24	24	24
2.	Short Answer Type (SA-I)	09	12	18
3.	Short Answer Type (SA-II)	06	09	18
4.	Long Answers Type (LA)	05	08	20
Total		44	53	80

Unitwise Weightage :

No.	Name of the Chapter	Unitwise Marks		Weightage of unit (without options)
		Without General Option	With General Option	
1.	Chemical Reactions and Equations	04	04	25
2.	Acids, Bases and Salts	06	10	
3.	Metals and Non-Metals	05	08	
4.	Carbon and its Compounds	06	06	
5.	Periodic Classification of elements	04	06	
6.	Life Processes	06	10	22
7.	Control and Coordination	05	05	
8.	How do organism Reproduce ?	06	09	
9.	Heredity and Evolution	05	05	11
10.	Light-Reflection and Refraction	06	09	
11.	Human Eye and Colourful-world	05	05	12
12.	Electricity	06	08	
13.	Magnetic Effect of Electric Current	06	10	10
14.	Sources of Energy	04	04	
15.	Our Environment	03	03	
16.	Management of Natural Resources	03	05	
Total		80	107	80

Note :

- Changing the Unitwise Weightage is not allowed. Chapter wise weightage can be change keeping objectives in mind.
- Structures of question paper shows marks with general options.



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STRUCTURE OF QUESTION PAPER

Total Marks : 80

SECTION - A (Objective Questions)

- Answer the following questions as directed. (Q.No. 1 to 24) [24]
(Each Question Carries 1 Mark)
- All the questions are compulsory.
- In this section objective questions like MCQ (Multiple choice questions) MRQ (More than one correct option MCQ), true and false statements, fill in the blanks, definition, formula, unit, very short answer questions, answer in one word or in one sentence, full forms, odd one out, arrange in sequence, match the followings etc. can be asked.

SECTION - B (VSA-I)

- From Q. No. 25 to 36 (12 questions), answer any 09 (nine) questions in short. [18]
(Each question carries 2 marks)

SECTION - C (VSA-II)

- From Q. No. 37 to 45 (09 questions), answer any 06 (six) questions in short. [18]
(Each question carries 3 marks)

SECTION - D (LA)

- From Q. No. 46 to 53 (08 questions), answer any 05 (five) questions in detail. [20]
(Each question carries 4 marks)

Note : Don't ask the questions from the chapters/topics which have been cancelled from the syllabus for the academic year 2020-21 by the Gujarat Secondary and Higher Secondary Board.



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SAMPLE QUESTION PAPER

Total Marks : 80

Instructions :

- (1) All the sections are compulsory. The number written in front of the instruction, indicates the total mark of section.
- (2) Where ever its required, draw the neat, standard and labeled diagram.
- (3) Write your answer in sequence according to section.

SECTION-A : Objective Questions

- ❖ From question number 01 to 24, answer all questions as directed, within the limit of 10 to 20 words. (Each question carries 1 mark) [24]

● Chose the correct option for the following given statements.

- (1) Select the example of chemical reaction from the followings.
(A) Rusting of iron (B) Cutting of tree (C) Moving of bike (D) Tearing of paper
- (2) What is the valency of carbon ?
(A) 4 (B) 3 (C) 2 (D) 1
- (3) Which chemical substance is used for absorption of carbon dioxide gas ?
(A) KOH (B) HCl (C) H_2SO_4 (D) HNO_3
- (4) From the following, which is the best fuel for environment ?
(A) Petrol (B) Diesel (C) Kerosin (D) CNG
- (5) Suresh is not having match box for burning paper. How can he burn the paper in day time by using one of the following substance.
(A) Glass cube (B) Convex mirror (C) Concave mirror (D) Convex lens
- (6) You want to get the spectrum on white screen, then which of the following will you use ?
(A) Plane mirror (B) Prism (C) Diamond (D) both (B) and ©

● Fill in the blanks, for making the following statements true.

- (7) $CH_2=CH_2$ is _____ type of hydro carbon combination. (Saturated, Unsaturated)
- (8) According to modern periodic table, the properties of elements are periodic function of _____. (Atomic number, Atomic mass)
- (9) Opening and closing of stomata is regulated by _____ cells.
(Guard cells, Superficial cells, aerolar cells)
- (10) The transfer of pollen grains from the anther of a flower to the stigma of same flower is known as _____ type of pollination.
(Cross pollination, Self pollination, bi pollination)
- (11) Refractive index of water is 1.33 and that of kerosin is 1.44. When ray of light passes from air to water and from air to kerosin, then in _____ medium it suffers more refraction. (Water, Kerosin)
- (12) _____ reaction is done for getting the nuclear energy.
(Nuclear transfer, Nuclear fission)



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- Write 'True' or 'False' for following statements.

- (13) According to Newland's hypothesis, there are only 56 elements existing in nature.
- (14) In insects, like wings, eye is also an extensive adaptation organ.
- (15) Speed of light is more in kerosin in comparision to Terpentine.
- (16) Solar cooker works on the principle of "transformation of solar energy into light energy."

- Answer the following questions as directed.

- (17) What happens when there is no brain box in surrounding of human brain ?
- (18) The wings of birds and wings of bats are the example of which type of organs ?
- (19) Is it possible that rats will get birth without tails, if we continuously cut their tails for many generations ? Why ?
- (20) Describe the S.I. Unit of electric current.
- (21) Which is the best source of energy between Coal and C.N.G. ?
- (22) Write down full form of C.F.C.
- (23) Amritbhai goes to market for purchasing purpose, then shopkeeper gives him things in plastic bag. Amritbhai is denying for taking the things in plastic bag. Which type of approach is it for the conservation of environment ?
- (24) Match the following columns.

Hormone

- a) Adrenaline
- b) Insuline

Function

1. Controls amount of glucose in blood
2. Controls growth and development of body.
3. Increases hearbeat rate.

SECTION - B

- From question number 25 to 36, answer any 9 questions as directed, within the limit of 40 to 50 words. (Each question carries 2 marks) [18]

25. Complete and balance the given reaction,
 $\text{NaOH(aq)} + \text{Zn(s)} \rightarrow$
26. Describe any four physical properties of metals.
27. Write down any two drawbacks of Dobereiner classification.
28. What standards Mendeleev has taken for preparation of his periodic table ?
29. What changes occur in female, when the egg is not fertilised ? Explain.
30. Explain gender determination process in human being.
31. Write down two advantages of connecting the resistances in parallel in a circuit.
32. Define electric potential and describe its S.I. Unit.
33. Describe the characteristics of magnetic field lines.
34. How does the depletion of ozone layer take place ? Describe.
35. What are the five 'R' for the conservation of environment ? Explain about any one of them.
36. Give two examples of active involvement of people lead to efficient management of forest.



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SECTION - C

- **From Q. No. 37 to 45 answer any 6 questions in short as directed, within the limit of 60 to 80 words. (Each question carries 3 marks) [18]**
 37. What is a combination reaction ? Describe with a chemical equation.
 38. How is the extraction of metals done, which are at the top of reactivity series ? Describe with example.
 39. What is alloy ? Name any two alloys and their components.
 40. Describe the structure of Human Brain.
 41. Why is it necessary that reproduction should be by the process of sexual reproduction ?
 42. Regeneration and reproduction are not same. Explain with example.
 43. What is the refraction of light ? write down two laws of refraction.
 44. What is the power of lens ? Give the S.I. unit of power of lens and write down the formula relating the power of lens and focal length of lens.
 45. An electric lamp, whose resistance is $20\ \Omega$, a conductor of $4\ \Omega$ resistance are connected to 6 v. battery. Calculate -
 - a) The total resistance of circuit.
 - b) The current through the circuit.
 - c) The potential difference across the electric lamp.

SECTION - D

- **From Q. No. 46 to 53 answer any five questions, in detail, within the limit of 90 to 120 words. (Each question carries 4 marks) [20]**
 46. Explain the reaction of sodium carbonate with hydrochloric acid using a diagram.
 47. Explain the importance of pH in every day life in followings.
 - a) pH in our digestive system.
 - b) pH change as cause of tooth decay.
 48. Explain the cleansing action of soap with the help of proper drawing.
 49. Explain the structure of small intestine and describe the process of digestion in it.
 50. Describe the structure of Human Respiratory system.
 51. With the help of a diagram, explain the splitting of white light from a glass prism.
 52. Describe the origin of magnetic field in a solenoid due to flow of electric current with the help of a proper diagram.
 53. Draw the diagram of domestic electric circuit and explain it.