

## COMMON QUARTERLY EXAMINATION - SEPTEMBER 2019

## Standard 10

Reg. No.

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Time Allowed: 2.30 Hours

SCIENCE

Maximum Marks: 75

**Instructions:**

1. Check the question paper for fairness of printing. If there is any lack of fairness, inform the Hall Supervisor immediately.
2. Use Blue (or) Black ink to write and underline and use pencil to draw diagrams.

Note: This question paper contain four parts.

**PART - I**

Note: i) Answer all the questions.

12×1=12

ii) Choose the most suitable answer and write the code with corresponding answer.

- 1) In which of the following sport turning of effect of force used  
a) swimming                      b) tennis                      c) cycling                      d) hockey
- 2) If a substance is heated or cooled, the change in mass of that substance is  
a) positive                      b) negative                      c) zero                      d) none of the above
- 3) SI unit of resistance is  
a) mho                      b) Joule                      c) Ohm                      d) Ohm metre
- 4) The gram molecular mass of oxygen molecule is  
a) 16g                      b) 18g                      c) 32g                      d) 17g
- 5) Chemical formula of rust is  
a)  $FeOxH_2O$                       b)  $FeO_4 \cdot xH_2O$                       c)  $Fe_2O_3 \cdot xH_2O$                       d) FeO
- 6) Common name of copper (II) sulphate pentahydrate is \_\_\_\_\_  
a) Green Vitriol                      b) Blue vitriol                      c) Gypsum                      d) Epsom salt
- 7) Krebs' cycle takes place in  
a) chloroplast                      b) mitochondrial matrix  
c) stomata                      d) inner mitochondrial membrane
- 8) Rabbit do not have \_\_\_\_\_ teeth.  
a) incisors                      b) canines                      c) premolars                      d) molars
- 9) Bipolar neurons are found in  
a) retina of eye                      b) cerebral cortex                      c) embryo                      d) olfactory epithelium
- 10) There are \_\_\_\_\_ pairs of cranial nerves.  
a) 12                      b) 13                      c) 31                      d) 14
- 11) The centromere is found at the centre of the \_\_\_\_\_ chromosome.  
a) Telo centric                      b) Meta centric  
c) Sub-meta centric                      d) Acro centric
- 12) Based on the food chain, pick out the odd one out.  
(plants → grosshopper → frog → tiger → snake)

**PART - II**

Note : Answer any seven questions. [Q.No. 22 is compulsory]

7×2=14

- 13) State the principle of moments.
- 14) Differentiate convex lens and concave lens.
- 15) Define atomicity.
- 16) True or False. If false give the correct statement:

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X - Science

1. Moseley's periodic table is based on atomic mass.
2. An alloy is a heterogeneous mixture of metals.

## 17) Match the following:

- |                  |   |   |
|------------------|---|---|
| 1. Blue Vitriol  | - | $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ |
| 2. Gypsum        | - | $\text{CaO}$                              |
| 3. Deliquescence | - | $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ |
| 4. Hygroscopic   | - | $\text{NaOH}$                             |

- 18) Draw and label the structure of mitochondria.
- 19) a) Write the dental formula of rabbit.  
b) How is diastema formed in rabbit?
- 20) Which gland is called as the "master gland"? Give reason.
- 21) What are allosomes?
- 22) Calculate the resistance of a conductor through which a current of 2A passes, when the potential difference between its ends is 30V.

**PART - III****Note : Answer any seven questions. [Q.No. 32 is compulsory] 7×4=28**

- 23) State the universal law of gravitation and derive its mathematical expression.
- 24) a) List any five properties of light.  
b) Write any two advantages of telescopes.
- 25) Derive the ideal gas equation.
- 26) Explain smelting process.
- 27) 'A' is blue coloured crystalline salt. On heating it loses blue colour and to give 'B'. When water is added; 'B' gives back to 'A'. Identify A and B write the equation.
- 28) Explain the male reproductive system of rabbit with a labeled diagram.
- 29) Enumerate the functions of blood.
- 30) Illustrate the structure and functions of brain.
- 31) a) Define triple fusion. b) Draw and label the structure of neuron.
- 32) a) 1.5g of solute is dissolved in 15g of water to form a saturated solution at 298K. Find out the solubility of the solute at the temperature.  
b) What is meant by binary solution?

**PART - IV****Note : 1. Answer all the questions.****3×7=21****2. Each question carries seven marks.****3. Draw diagram wherever necessary.**

- 33) a) Explain the construction and working of a 'compound microscope'.  
b) State Snell's law. (OR)  
a) Calculate the current and the resistance of a 100W, 200V electric bulb in an electric circuit.  
b) Write three fundamental laws of gases.
- 34) a) Give the salient features of "modern atomic theory".  
b) Calculate the number of moles in 27g of Al.  
(OR)  
a) Name the acid that renders aluminium passive why?  
b) In what way hygroscopic substances differ from deliquescent substances.
- 35) a) Classify neurons based on its structure.  
b) Why is the colour of the blood red?  
c) Name two layered protective covering of human heart.

**(OR)**

How is the structure of DNA organized? What is the biological significance of DNA?

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