

**E****10<sup>th</sup> - Quarterly Common Examination - 2018**

Reg. No.

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Time : 2.30 hrs.

**SCIENCE**

Max. Marks : 75

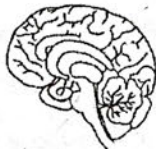
**Instructions :** 1) Check the question paper for fairness of printing. If there is any lack of fairness, inform the Hall Supervisor immediately. 2) Use Blue or Black ink to write and underline and pencil to draw diagrams.  
**Note :** This question paper contains three sections.

**SECTION - I (Marks : 15)****Note : 1. Answer all the questions.****2. Choose the correct answer from the alternatives given in the brackets****15 x 1 = 15**

- In persons suffering from insulin - dependent diabetes, .....the cells of pancreas are degenerated.  
a) Alpha b) Beta c) Gamma d) Delta
- The first vaccine injected into a just-born baby is..... a) Oral polio b) DPT c) DPT and Oral polio d) BCG
- Anemophily occurs in.....a) Vallisneria b) Grass c) Coconut d) Datura
- The endocrine gland related to the immune system is..... a) thyroid b) thymus c) adrenal d) pineal
- The important event of meiosis is the crossing over. It occurs during.....  
a) Leptotene b) pachytene c) diplotene d) zygotene
- Excess production of somatotrophic hormone in children leads to.....  
a) dwarfism b) acromegaly c) gigantism d) scurvy
- .....have equal number of neutrons. a) Isobars b) Isotones c) Isotopes d) none
- From the given examples, form the pair of isotopes and the pair of isotones. ( ${}^1_1\text{H}^1$ ,  ${}^{13}_6\text{C}^{13}$ ,  ${}^2_1\text{H}^2$ ,  ${}^{14}_7\text{N}^{14}$ )
- Chemical volcano is an example of.....(combination reaction / decomposition reaction)
- The hydroxide ion concentration of a solution is 0.001 M. The  $p^{\text{OH}}$  of the solution is.....  
a) 4 b) 5 c) 3 d) 11
- One light year is equal to..... a)  $9.467 \times 10^{15}$  m b)  $9.467 \times 10^{15}$  cm c)  $9.467 \times 10^{15}$  km d)  $9.467 \times 10^{15}$  nm
- Based on the food chain, pick out the odd one out.  
(plant → grasshopper → frog → tiger → snake)
- .....is commonly used and allows for the lowest attainable temperature.  
a) liquid hydrogen b) liquid helium c) hydrogen gas d) helium gas
- The electric potential difference between two points in an electric circuit is measured by using  
a) watt-hour meter b) ammeter c) voltmeter d) galvanometer
- In Ocean thermal energy plant, the volatile liquid like.....is used.  
a) Helium b) ammonia c) water d) hydrogen

**SECTION - II (Marks : 40)****Note : Answer any 20 questions.****20 x 2 = 40**

- What are variations? Mention their types.
- Assertion (A) : The Experiment of Mendel considering the inheritance of a single trait is called monohybrid cross.  
Reason : (R) : Mendel selected tall and dwarf plants and allowed them to grow naturally.  
Choose the correct option below :  
a) A-correct R-correct b) A-correct R-wrong c) A-wrong R-correct d) A-correct R-not relevant
- Match the following by identifying the pair  
(medicines, fuel, microbes, metabolism, organic acids)  
i) Vaccine ii) natural gas iii) citric acid iv) monoclonal antibodies v) vitamins
- What are formites?
- Differentiate between the diseases - night blindness and colour blindness.
- December 1st is observed as a "AIDS DAY". What are the symptoms of AIDS?
- Name two diseases that are transmitted by houseflies. Mention their causative pathogens.
- The diagram is of the human brain. Shade the areas marked A and B in the parts of the brain with the function.



- a) Seat of smell b) seat of vision
- What is corpora quadrigemina? Name the functions associated with it.
- Which hormone(s) is/are called i) personality hormone ii) fight, flight, and fright hormones.
- What is double fertilization?
- What is triple fusion?
- Match the following  
i) Autochory - Lotus  
ii) Anemochory - Xanthium

E - Science - 1

D. SRINIVASAN., M.COM. M.Ed.,

- iii) Hydrochory - Tridax  
iv) Zoochory - Balsam
29. Spot the error and correct it.  
According to the Henry's law, an increase in pressure decreases the ability of gases in liquids.
30. Calculate the weight percent of the solution when 10g of solute is dissolved in 40g of solvent.
31. Assertion (A) : Atoms of certain elements such as hydrogen, nitrogen, oxygen do not have independent existence.  
Reason (R) : Atoms of helium, neon argon do have independent existence.  
Choose the correct option below :  
a) A is correct R is wrong b) A is wrong R is right c) R explains A d) R does not Explain A
32. Find gram molecular mass of the following (Hint : atomic mass of C = 12, H = 1, O = 16, N = 14) i)  $C_6H_{12}O_6$  ii)  $HNO_3$
33. Calculate the number of moles in i)  $12.046 \times 10^{23}$  atoms of copper ii) 27.95g of iron
34. Pick out odd one out and give reason i) HCl,  $HNO_3$ ,  $H_2SO_4$ , HCOOH  
ii) Blood, Baking Soda, Vinegar, Household Ammonia
35. Suggest a reason for each observation.  
i) In fireworks, powdered magnesium is used rather than magnesium ribbon.  
ii) Zinc and dilute  $H_2SO_4$  react much more quickly when a few drops of copper sulphate solutions are added.
36. Match the following  
i) Small dimensions - kilometer  
ii) Large dimensions - screw gauge  
iii) Long distance - scale  
iv) Small distance - light year  
v) - Altimeter
37. Fill up  
i) Vernier caliper : Vernier scale and main scale, Screw gauge : ..... and .....
38. Why does a spanner have a long handle?
39. State Newton's law of Gravitation.
40. Write two principles that are used in rocket propulsion.
41. Write the differences between mass and weight.
42. Match the following.  
i) Potential difference - Coulomb  
ii) Current - Volt  
iii) Charge - Ohm  
iv) Resistance - Newton  
v) - Ampere
43. Fuse wire made up of an alloy of.....which has high resistance and.....
44. Calculate the energy produced when 1kg of substance is fully converted into energy.
45. What measures would you suggest to minimize environmental pollution caused by burning of fossil fuel?

#### SECTION - III (Marks : 20)

Note : i) Answer any four questions by choosing one question from each part.

ii) Draw diagrams wherever necessary.

#### PART - I

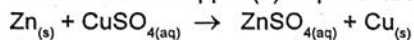
46. Describe the life cycle of plasmodium in man.  
47. Describe the structure of neuron with the help of neat, labelled diagram.

#### PART - II

48. Describe the structure of a dicot seed.  
49. List out the harmful effects of burning coal.

#### PART - III

50. State the Avogadro's law. List out its applications.  
51. When zinc and copper (II) sulphate are heated together, the following redox reaction occurs :



- i) What does the word redox stand for?  
ii) In the above reaction a) which one is the reducing agent? b) Which one is the oxidising agent?  
iii) Show how electrons are transferred in the reaction. iv) Write the ionic equation for the redox reaction.

#### PART - IV

52. i) Space stations are used to study the effects of long space flight on the human body. Justify.  
ii)  $F = Gm_1 m_2/d^2$  is the mathematical form of Newton's Law of gravitation, G-gravitational constant,  $m_1, m_2$  are the masses of two bodies separated by a distance d, then give the statement of Newton's law of gravitation.
53. Raman's air conditioner consumes 2160 W of power, when a current of 9.0 A passes through it.  
i) What is the voltage drop when the air conditioner is running?  
ii) How does this compare to the usual household voltage?  
iii) What would happen if Raman tried connecting his air conditioner to a 120V line?