

**PADASALAI'S HALF YEARLY EXAM 2019 - MODEL QUESTION PAPER**

STD: X

MARKS: 75

SUB: SCIENCE

TIME:2.30hrs

**PART-I**

Choose the most suitable answer and write the code with corresponding answer (12×1=12)

- One kilogram force equals to \_\_\_\_\_  
a) 9.8 dyne b)  $9.8 \times 10^4$  dyne c)  $98 \times 10^4$  dyne d) 980 dyne
- The SI unit of electrical resistivity is \_\_\_\_\_  
a) Ohm b) Ohm metre c)  $\text{Ohm}^{-1} \text{metre}^{-1}$  d)  $\text{Ohm}^{-1}$
- Proton – Proton chain reaction is an example of \_\_\_\_\_  
a) Nuclear fission b) Nuclear fusion c)  $\alpha$ -decay d)  $\beta$ -decay
- The gram molecular mass of  $\text{CaCO}_3$  is \_\_\_\_\_g  
a) 100 b) 96 c) 44 d) 32
- \_\_\_\_\_ is an important metal to form amalgam.  
a) Ag b) Hg c) Mg d) Al
- When pressure is increased at constant temperature the solubility of gases in liquid \_\_\_\_\_ a) No change b) increases c) decreases d) no reaction
- Which is formed during anaerobic respiration  
a) Carbohydrate b) Ethyl alcohol c) Acetyl CoA d) Pyruvate
- Which is the sequence of correct blood flow  
a) ventricle – atrium – vein - arteries b)  
atrium- ventricle – veins - arteries c)  
atrium- ventricle- arteries - vein d)  
ventricles – vein -atrium – arteries
- Bipolar neurons are found in  
a) retina of eye b) cerebral cortex c) embryo  
d) respiratory epithelium
- Okasaki fragments are joined together by \_\_\_\_\_  
a) Helicase b) DNA polymerase c) RNA primer d) DNA ligase
- Which type of cancer affects lymph nodes and spleen?  
a) Carcinoma b) Sarcoma c) Leukemia d) Lymphoma

12. Which is used to edit programs?  
a) Inkscape b) script writer c) stage d) sprite

### PART-II

**Answer Any Seven of the following:**

**(7×2=14)**

**(Question number 22 is compulsory)**

13. State Snell's law.
14. Distinguish between linear and superficial expansions.
15. Mention two cases in which there is no Doppler effect in sound?
16. What is rust? Give the equation for formation of rust.
17. The molecular formula of an alcohol is  $C_4H_{10}O$ . The locant number of its  $-OH$  group is 2.  
(i). Draw its structural formula.  
(ii). Give its IUPAC name.
18. Why is the teeth of rabbit called heterodont?
19. Why are thyroid hormones referred as personality hormone?
20. Draw the types of chromosomes based on the position of centromere and label its parts.
21. Define Ethnobotany and write its importance.
22. A sound producing a sound of frequency 500Hz is moving towards a listener with a velocity of 30 m/s. what will be the frequency heard by listener?

### PART- III

**iii. Answer any seven of the following:**

**(Question number 32 is compulsory)**

**(7×4=28)**

23. (i) Explain Cartesian sign conventions in detail.  
(ii) State Newton's third law with an example.
24. Derive the ideal gas equation.
25. (i) List out the merits of LED bulb.  
(ii) Define Doppler Effect.
26. (a) In what way hygroscopic substances differ from deliquescent substances.  
(b) Write the uses of Aluminium.
27. How is ethanol manufactured from sugarcane?

28. Differentiate the following
- (a) Monocot root and Dicot root
  - (b) Aerobic and anaerobic respiration.
29. (a) How are arteries and veins structurally different from one another?  
(b) Enumerate the importance of forest.
30. With a neat labelled diagram explain the structure of a neuron.
31. (a) State the applications of DNA fingerprinting technique.  
(b) How cancer cell different from a normal cell?
32. (i) Find the percentage of nitrogen in ammonia.  
(ii) Write any two features of natural and artificial radioactivity.

#### PART-IV

**Note. (i) Answer all the questions:**

**(3×7=21)**

33. (a) (i) State and prove the law of conservation of linear momentum.  
(ii) State Joule's law of heating

**(OR)**

- (b) (i) State three uses of ultrasonic vibrations.  
(ii) Compare the properties of alpha, beta and gamma radiations.
34. (a) (i) Give the salient features of "Modern atomic theory".  
ii. State the applications of Avogadro's law.

**(OR)**

- b. (i) How is metal corrosion prevented?  
(ii) What is chemical equilibrium? What are its characteristics?
35. (a) (i) With a neat labelled diagram describe the parts of a typical angiospermic ovule.  
(ii) What are allosomes?

**(OR)**

- (b)**(i) Where are estrogens produced? What is the role of estrogens in the human body?  
(ii) How do you differentiate homologous organs from analogous organs?  
(iii) Expand the following abbreviations. [AIDS, HIV]

**\*\*\*\* ALL THE BEST \*\*\*\***

**PREPARED BY**

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