

GSEB
Batch :
10th Std.
Eng. Medium

MAHESH TUTORIALS
Subject : Science And Technology
Chapter : 4, 5, 10, 11, 15, 16, 17, 18
Question Paper

Test -
Date:
Marks : 100
Time: 3 Hrs.

PART - A

Select a proper option (a), (b), (c) or (d) from those given below each questions : 50

1. **The symbol of unit of charge is _____.**
(a) C (b) Q (c) I (d) A
2. **1- A = _____ mA**
(a) 10^3 (b) 10^{-3} (c) 10^{-6} (d) 10^6
3. **In volta's cell, anode is _____ and cathode is _____.**
(a) Carbon rod, Zinc plate (b) Copper plate, Zinc plate
(c) Zinc plate, Copper plate (d) Copper plate, Carbon rod
4. **Which of the following relations indicates Ohm's law?**
(a) $R = \frac{I}{V}$ (b) $I = \frac{R}{V}$ (c) $P = I^2R$ (d) $V = IR$
5. **At any point in a series connection of resistors _____.**
(a) Voltage is same.
(b) Current is same.
(c) Voltage and current both are same
(d) Voltage and current both are not same.
6. **Which instrument is used to know the presence of an electric current ?**
(a) Fuse (b) Galvanometer
(c) Voltmeter (d) Magnetic needle
7. **How is a current carrying wire is placed in a magnetic field, so that magnetic field does not act on it?**
(a) Parallel to magnetic field (b) Perpendicular to magnetic field
(c) At an angle 40° with magnetic field (d) Can be arranged any way
8. **The direction of magnetic field lines is taken as _____.**
(a) N to S (b) S to N
(c) Entering from both poles (d) Coming out from both poles
9. **Who gave the law of electromagnetic induction?**
(a) Faraday (b) Oersted (c) Ampere (d) Volta
10. **By quickly moving the magnet away from the coil the rate of change of magnetic field lines increases. This _____ the magnitude of the induced current.**
(a) Increases (b) Decreases (c) Keeps the same (d) Halves
11. **_____ receives radio waves and microwaves coming from celestial objects to provide information.**
(a) Hubble telescope (b) Radio telescope (c) Micro telescope (d) None
12. **_____ rays are absorbed by the ozone layer of the atmosphere.**
(a) Micro (b) Radio (c) Ultraviolet (d) X

13. _____ is 1400 times bigger than Earth.
 (a) Saturn (b) Neptune (c) Jupiter (d) Mars
14. A tail of comet contains HCN and _____ compounds.
 (a) CO₂ (b) CO (c) O₂ (d) HCO₃
15. The sun takes _____ crore years to complete one revolution.
 (a) 22 (b) 13.6 (c) 22.5 (d) 23
16. Which planet of solar system has a "twin brother" type of moon (satellite)?
 (a) Pluto (b) Saturn (c) Uranus (d) Mars
17. When was the Halley's comet seen last?
 (a) 1976 (b) 1986 (c) 1994 (d) 1997
18. What is the percentage of carbon in peat coal?
 (a) 28 (b) 38 (c) 18 (d) 48
19. What is the % of carbon in coke?
 (a) 80% (b) 90% (c) 70% (d) 60%
20. Which of the following is not an aromatic compound?
 (a) Cyclopentane (b) Benzene (c) Xylene (d) Toluene
21. Fractions of hydrocarbon are separated depending on _____.
 (a) Vapour pressure (b) Carbon chain length
 (c) Density (d) Boiling points
22. As knockng of n-heptane takes place, its octane number is _____.
 (a) 100 (b) 0 (c) 1 (d) 1000
23. 'ol' suffix is attached with which group in nomenclature ?
 (a) -CHO (b) $\begin{array}{l} \diagup \\ \text{C} = \text{O} \\ \diagdown \end{array}$ (c) -OH (d) -X
24. Write the general formulae of alcohol?
 (a) C_nH_{2n+1}OH (b) C_nH_{2n+2}OH (c) C_nH_{2n}OH (d) C_{2n}H_{n+1}OH
25. Pure ethanol can be obtained by _____.
 (a) Centrifugation (b) Membrane technology
 (c) Distillation (d) Biotechnology
26. What is the percentage of water in rectified spirit?
 (a) 10 (b) 5 (c) 8 (d) 7
27. Which is the simplest Ketone?
 (a) Butanone (b) Propanone (c) Pentanone (d) Hexanonane
28. Conversion of methanal to methanal cyanohydrin is _____.
 (a) Addition reaction (b) Substitution reaction
 (c) Displacement reaction (d) Oxidation reaction
29. Substances like _____ and _____ are added in ethyl alcohol to make it unfit for drinking.
 (a) Sulphuric acid; Propanol (b) Hydrochloric acid; carbon monoxide
 (c) Methanol; copper sulphate (d) Ammonia; Butanol

30. **In which animals does reproduction occur by binary fission?**
 (a) Earthworm (b) Locust (c) Planaria (d) Amoeba
31. **Which of the following organisms shows budding?**
 (a) Hydra (b) Amoeba (c) Paramecium (d) Spirogyra
32. **The leaves of Bryophyllum consists of _____ to propagate vegetatively.**
 (a) Buds (b) Spores (c) Tubers (d) None
33. **Which organism shows binary fission ?**
 (a) Pig (b) Earthworm (c) Hydra (d) Amoeba
34. **Which of the following groups of two hormones is secreted from the ovary ?**
 (a) Testosterone and aldosterone (b) Estrogen and progesterone
 (c) Progesterone and testosterone (d) Estrogen and aldosterone
35. **Where are genes located?**
 (a) With Muscles (b) On bones
 (c) On chromosomes (d) With nerve fibres
36. **During which process sex cell becomes haploid?**
 (a) Mitosis (b) Meiosis (c) Budding (d) Multiple fission
37. **Pure Tall pea plant and pure dwarf pea plant when crossed (hybridized) in F_1 generation _____.**
 (a) All plants obtained were tall
 (b) All plants obtained were dwarf
 (c) Tall and dwarf plants obtained in the ratio 1 : 1
 (d) None
38. **The chromosomes in each of the somatic cell in a woman are _____.**
 (a) $2A + XX$ (b) $2A + XY$ (c) $A + X$ (d) $2A + X$
39. **The expression of tallness in the pea plant is exhibited by what?**
 (a) TT (b) Tt (c) A or B (d) tt
40. **The structural and functional unit of environment is known as _____.**
 (a) Food chain (b) Food web (c) Ecosystem (d) None of them
41. **Which is the main energy source for an ecosystem ?**
 (a) Glucose (b) Green plant (c) Sunlight (d) Protein
42. **What is being formed due to entry of harmful chemical in food chain ?**
 (a) Bioequilibrium (b) Eutrophication
 (c) Biological magnification (d) Biological regulation
43. **Each step or level of food chains forms _____.**
 (a) Trophic level (b) Food web (c) Both (d) None
44. **Which trophic level has lowest energy available in an ecosystem ?**
 (a) Producer (b) Herbivorous
 (c) Primary carnivorous (d) Higher carnivorous
45. **How many National Parks are there in Gujarat ?**
 (a) 5 (b) 4 (c) 21 (d) 24
46. **In Gujarat total of _____ sq km area is covered by the forest.**
 (a) 18000 (b) 18999 (c) 18555 (d) None

- 47. Forests and wild lives are which type of natural resource?**
 (a) Biotic and renewable (b) Biotic and non-renewable
 (c) Abiotic and renewable (d) Abiotic and non-renewable
- 48. Which is the main importance of wildlife?**
 (a) Agricultural product (c) Human requirement
 (c) Soil Conservation (d) Success of the gene bank
- 49. Large-scale deforestation decreases _____ .**
 (a) rainfall (b) soil erosion (c) global warming (d) Atmospheric CO₂
- 50. Which one is useful as a huge water reservoir?**
 (a) Dam (b) Pond (c) Canals (d) Wells

PART - B
SECTION - A

Answer the following questions : [2 marks]

- | | | |
|---|-----------|-----------|
| 1. Write short note on asteroids. | OR | 10 |
| 1. Write short note on Mercury. | | |
| 2. Why does heating effect result on passing of electric current? | | |
| 3. Write short note on L.P.G. | OR | |
| 3. What happen when methane gas is burnt ? | | |
| 4. If an electric lamp glows on 2.5 V drawing 500mA current then calculate the power and the energy consumed in 1 minute. | | |
| 5. What is short circuit ? | | |

SECTION - B

Answer the following questions : [2 marks]

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|---|-----------|-----------|
| 6. Write short note on uses of ethanol. | | 10 |
| 7. What is reproduction ? State its importance. | | |
| 8. How is ozone formed? | | |
| 9. What are fossils ? | OR | |
| 9. What is Heredity ? | | |
| 10. Note down the applications to save environment. | | |

SECTION - C

Answer the following questions : [3 marks]

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| 11. State some of the uses of artificial satellite. | | 15 |
| 12. The three resistors of resistance 5 Ω, 10 Ω and 30 Ω, are connected with a 12 V battery in parallel. Determine (a) Total current in the circuit (b) Equivalent circuit resistance. | OR | |
| 12. Two lamps of 100 W and 60 W are joined in parallel with 220 V line. How much current will flow through the circuit ? | | |
| 13. What are saturated hydrocarbons? Give structural formula of first five saturated hydrocarbons. | | |
| 14. Describe the Types of waste. | OR | |
| 14. Explain food web with example. | | |
| 15. Give the importance of Chipko Andolan. | | |

SECTION - D

Answer the following questions : [5 marks]

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| 16. Explain industrial production of ethanol by fermentation process. | | 15 |
| 17. Describe the principle, construction and working of an electric motor along with figure. | OR | |
| 17. Describe the principle, construction and working of an electric generator with a figure. | | |
| 18. Differentiate between Male reproductive system and Female reproductive system. | OR | |
| 18. Explain in detail artificial propagation. | | |