

GSEB  
Batch :  
10<sup>th</sup> 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. **1 A = \_\_\_\_\_ mA**  
(a) 100 (b)  $10^3$  (c)  $10^{-3}$  (d)  $10^{-6}$
2. **Who discovered electron?**  
(a) Coulomb (b) Volta (c) Ampere (d) Thomson
3. \_\_\_\_\_ **solution is used in the volta's cell.**  
(a) Dilute hydrochloric acid (b) Dilute sulphuric acid  
(c) Dilute nitric acid (d) Concentrated sulphuric acid
4. **The nature of the V ÷ I graph in the Ohm's experiment will be \_\_\_\_\_.**  
(a) Curve (b) Parabolic (c) Straight line (d) None
5. **If the current in a circuit is doubled, the power becomes \_\_\_\_\_.**  
(a) Double (b) Half (c) 4 times (d) Remains same
6. **A fuse wire is \_\_\_\_\_.**  
(a) Conductor (b) Insulator  
(c) Semi-conductor (d) Made up of any material.
7. **Which instrument is used for converting electrical energy into mechanical energy ?**  
(a) Electric generator (b) Electric motor (c) Electric iron (d) Electric oven
8. **Who was the first person to notice the magnetic effect of electric current?**  
(a) Faraday (b) Oersted (c) Volta (d) Ampere
9. **Which device is used to convert electrical energy into mechanical energy?**  
(a) Electric generator (b) Solenoid (c) Electric motor (d) Electric iron
10. **The conducting coil used in the electromagnetic induction phenomenon is called an \_\_\_\_\_.**  
(a) Conductor (b) Inductor (c) Resistor (d) Insulator
11. \_\_\_\_\_ **X-ray observatory sends the X-ray photographs of the galaxy.**  
(a) Hubble (b) Chandra (c) Kepler (d) Newton
12. **Venus spins \_\_\_\_\_ to \_\_\_\_\_.**  
(a) East, West (b) North, South (c) South, North (d) West, East
13. **Which planet is believed to be entirely made of hydrogen?**  
(a) Jupiter (b) Saturn (c) Mercury (d) Pluto
14. **1 light year = \_\_\_\_\_ km.**  
(a)  $3 \times 10^8$  (b)  $9.46 \times 10^{12}$  (c)  $9.46 \times 10^{10}$  (d)  $9.46 \times 10^{15}$
15. \_\_\_\_\_ **billion years ago a big explosion must have taken place according to the big bang explosion.**  
(a) 13.8 (b) 13.7 (c) 13.6 (d) 13.9

16. **Which planet of the solar system has maximum moons?**  
 (a) Mercury (b) Jupiter (c) Venus (d) Saturn
17. **Which bright comet was seen in 1997?**  
 (a) Halley (b) Helbopp (c) Ceres (d) Shoe-makerlevi
18. **Which type of coal is used in thermal power stations ?**  
 (a) Lignite (b) Bitumen (c) Anthracite (d) Peat
19. **Which of the following is used as fuel?**  
 (a) Coal tar (b) Coal gas (c) Water gas (d) Ammonia
20. **Which of the following is heterocyclic based nitrogen compound?**  
 (a) Purine (b) Pyridine  
 (c) Thiophene (d) Hydrogen sulphide
21. **Which of the following fractions has largest number of carbons?**  
 (a) Tar (b) Kerosene (c) Diesel oil (d) Gasoline
22. **What is the proportion of tetraethyl lead to gasoline, when used in motors?**  
 (a) 1 : 4 (b) 2 : 3 (c) 1 : 1 (d) 1 : 5
23. **Which functional group is there in methyl ethanoate ?**  
 (a) Alcohol (b) Halide (c) Ketone (d) Ester
24. **Write the formulae of Pentane ?**  
 (a)  $C_5H_{12}$  (b)  $C_4H_{10}$  (c)  $C_3H_8$  (d)  $C_2H_6$
25. **Ethanol burns with \_\_\_\_\_ flame.**  
 (a) Orange (b) Yellow (c) Blue (d) Red
26. **What is the percentage of water in rectified spirit?**  
 (a) 10 (b) 5 (c) 8 (d) 7
27. **Formaldehyde is the common name of \_\_\_\_\_**  
 (a) Hexanal (b) Ethanal (c) Methanal (d) Propanal
28. **What is used for preservation of dead animals?**  
 (a) Methanal (b) Formaldehyde (c) Formalin (d) Formic acid
29. **What is prepared by Fisher-Tropsch method ?**  
 (a) Acetic acid (b) Acetaldehyde (c) Acetone (d) Ethanol
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 regeneration?**  
 (a) Amoeba (b) Paramecium (c) Hydra (d) Rhizopus
32. **The sex cells involved in sexual reproduction are \_\_\_\_\_.**  
 (a) Zygote (b) Spores (c) Gametes (d) None
33. **Which of the following organism shows regeneration ?**  
 (a) Amoeba (b) Paramecium (c) Hydra (or Planaria) (d) Rhizopus
34. **Where are testes located in male ?**  
 (a) In abdominal cavity (b) In vas deference

- (c) In scrotum (d) None of above
- 35. What is considered as genetic material?**  
 (a) DNA (b) RNA (c) t-RNA (d) r-RNA
- 36. An example of retrovirus is \_\_\_\_\_.**  
 (a) Virus responsible for AIDS (b) TMV  
 (c) Bacteriophage (d) None
- 37. In male and female (humans), how many pairs of chromosomes are equal?**  
 (a) 2 pairs (b) 4 pairs (c) 22 pairs (d) 23 pairs
- 38. What is the chromosomal complex of the sperm that participates in the process of fertilization wherein the zygote develops into a male child?**  
 (a) 2A + XY (b) A + X (c) A + Y (d) A + O
- 39. In the experiment of hybridization between yellow coloured and rounded shaped seed bearing plants and the green coloured and wrinkled shaped seed-bearing plants, what would be the ratio of offsprings having new combinations in F<sub>2</sub> generation?**  
 (a) 3 : 1 (b) 3 : 3 : 2 : 1 (c) 4 : 3 : 2 : 1 (d) 9 : 3 : 3 : 1
- 40. The biotic community together with the physical environment forms an interacting system called \_\_\_\_\_.**  
 (a) Ecosystem (b) Environment (c) Both (d) None
- 41. The ozone molecules absorb U.V rays between \_\_\_\_\_ wavelength.**  
 (a) 310 to 200 nm (b) 600 to 1200 nm  
 (c) 500 to 700 nm (d) None
- 42. What is formed by interdependence of organisms on each other for their nutrition?**  
 (a) Biosphere (b) Food chain (c) Ecosystem (d) Environment
- 43. The flow of energy in an ecosystem is \_\_\_\_\_.**  
 (a) Unidirectional (b) Bidirectional  
 (c) Multidirectional (d) None
- 44. Ecosystem comprises .....**  
 (a) only biotic factors  
 (b) only abiotic factors  
 (c) both biotic and abiotic factors.  
 (d) Sometime biotic and sometimes abiotic factors
- 45. Which of the following dams is constructed in Gujarat ?**  
 (a) Narmada Dam (b) Sardar Dam  
 (c) Sardar Sarovar Dam (d) Tapi River Dam
- 46. Where did Amrita devi Bishnoi sacrificed her life for conservation of Khejri trees?**  
 (a) Khejrli (b) Jamnagar (c) Jaipur (d) None
- 47. Which of the following resource is not renewable in nearby future?**  
 (a) Wind (b) Water  
 (c) Endangered wild species (d) Coal and petroleum
- 48. Which of the following aspect is not for to conserve energy resources?**  
 (a) Bicycle can be used to cover short distances

- (b) Pressure cooker should be used for cooking
- (c) Use of own vehicle and not to waste time in public transport system
- (d) Make use of stairs instead of lift at least two to three floors

49. Which of the following activity is not helpful for the protection of environment?  
 (a) Social forestry (b) Rotation of crops  
 (c) Recycling of used water (d) Deforestation
50. In India \_\_\_\_\_ national parks, of which \_\_\_\_\_ national parks in Gujarat.  
 (a) 441, 88 (b) 88, 4 (c) 21, 4 (d) 88, 21

**PART - B**  
**SECTION - A**

**Answer the following questions : [2 marks]**

1. Explain meteors and meteorites. OR
1. Write short note on Mars.
2. Derive the practical unit of electric energy.
3. Write short note on C.N.G. OR
3. Write uses of ethyne and give its common name.
4. A lamp of 100 Watts glows for 2 hours daily. Calculate the energy consumed in 30 days.
5. Write a note on Fleming's left hand rule ?

**SECTION - B**

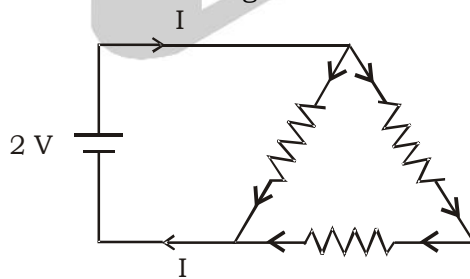
**Answer the following questions : [2 marks]**

6. Explain modern method of industrial production of ethanol.
7. What is sexual reproduction.
8. Name compounds responsible for depletion of ozone layer.
9. What is Heredity ? OR
9. What are fossils ?
10. How forests are our most valuable resources ?

**SECTION - C**

**Answer the following questions : [3 marks]**

11. How can an artificial satellite be used for communication ?
12. Find the electric current in the following circuit.



**OR**

12. An electric heater consumes 4.4 kW power when connected with a 220 V line voltage then, (i) Calculate the current passing through the heater, (ii) Calculate the energy consumed in 2 hours, (iii) Calculate resistance of a heater.
13. Write short note on unsaturated hydrocarbons.
14. What is trophic level and name the type of organism found in each trophic level? **OR**
14. Describe the Types of waste.
15. What steps could be taken to conserve energy resources.

**SECTION - D**

**Answer the following questions : [5 marks]**

16. Write short note on detergent and explain micelle formation with diagram.
17. Describe the principle, construction and working of an electric generator with a figure. OR
17. Describe the principle, construction and working of an electric motor along with figure.
18. Explain in detail artificial propagation. OR
18. Differentiate between Male reproductive system and Female reproductive system.