

(Std.10-STSE-1-)

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P-201, MIDC Indl. Area, Saravali, Boisar

**ISO 9001-2008 Certified**

**SCIENCE TALENT SEARCH EXAMINATION  
SAMPLE PAPER**



**CLASS - X**

**Please fill the following details immediately**

**Name:** \_\_\_\_\_

**Hall Ticket No.:** \_\_\_\_\_

**❖ 100 Questions ❖**

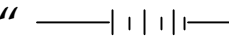
**❖ Time Allowed : 120 Minutes ❖**

- ❖ Do not open this question paper until the signal is given.**
- ❖ Please check the CLASS printed on the cover page and the inside is same when you open the booklet.**

## **General Instructions:**

- 1) All questions are compulsory and carry equal marks.
- 2) There is no negative marking.
- 3) There is only one correct answer hence write one choice only.
- 4) Please avoid cutting/overwriting etc.
- 5) Return the answer sheet to the invigilator at the end of the examination.
- 6) The question paper can be retained by the student.

## PHYSICS [30]

- 1) What is the maximum resistance which can be made using five resistors each of  $1/5 \Omega$ ?  
a)  $1/5\Omega$                       b)  $10\Omega$                       c)  $5\Omega$                       d)  $1\Omega$
- 2) If the current  $I$  through a resistor is increased by 100% (assume that temperature remains unchanged) the increase in power dissipated will be  
a) 100%                      b) 200%                      c) 300%                      d) 400%
- 3) The symbol “  ” refers to  
a) a resistor                      b) a battery                      c) a voltmeter                      d) an ammeter
- 4) The resistivity of wire  
a) varies with its cross section  
b) varies with its mass  
c) is independent of length  
d) is cross section of mass of the wire
- 5) The strength of magnetic field inside a long current carrying straight solenoid is  
a) more at ends than at the centre  
b) same at all points  
c) minimum in the middle  
d) increase from one point to another
- 6) The most important safety method used for protecting home appliances from short circuiting or overloading is  
a) earthing                      b) use of fuse  
c) use of stabilizers                      d) use of electric meter
- 7) The fuel of future is  
a) Gasohol                      b) Petrol                      c) CNG                      d) Hydrogen
- 8) Which is the ultimate source of energy?  
a) Sun                      b) Water                      c) Uranium                      d) Fossil fuels
- 9) A ray that falls on a plane mirror making an angle of  $30^\circ$  with the mirror. On reflection, the ray deviates through an angle of  
a)  $30^\circ$                       b)  $60^\circ$                       c)  $120^\circ$                       d)  $180^\circ$
- 10) The linear magnification of a convex lens is -1, when object is in front of a lens is  
a) at infinity                      b) at focus  
c) at  $2F_1$                       d) between  $F_1$  and  $2F_1$

- 11) Fuel is used in thermal power plants  
a]water            b]uranium        c]biomass        d]fossil fuels
- 12) For a given incident ray, a plane mirror is the reflected ray would turn through  
a]15°              b]30°              c]60°              d]90°
- 13) The focal length of a combination of concave lens of power -1D and concave lens of power -1.5D is  
a]-2m              b]2m                c]2.5m              d]-0.4m
- 14) The linear magnification produced by a convex mirror is always +ve. This is because  
a] convex mirror is a smaller mirror.  
b] image formed by convex mirror is always smaller in size than the object.  
c] image formed by a convex mirror is real .  
d] image formed by a convex mirror is always virtual and erect.
- 15) A virtual erect and diminished image can be formed by  
a] convex lens only                      b]concave lens only  
c] convex mirror                          d]concave mirror
- 16) You are given water, mustard oil, glycerin and kerosene. In which of these media a ray of light incident obliquely at same angle would bend the most?  
a] Kerosene        b]Mustard oil    c] Water            d] Glycerin
- 17) Which of the following cannot used to make a lens?  
a]Water            b]Glass            c]Plastic            d]Clay
- 18) The image formed by a convex lens is of the size of the object, If focal length of lens is 15cm,distance of object from the lens is  
a]10cm              b]15 cm              c]20 cm              d]30 cm
- 19) Advanced sunrise and delayed sunset are explained on the basis of  
a]dispersion of light                      b]scattering of light  
c] tyndal effect                              d]atmospheric refraction
- 20) At noon the sun appears white as  
a]light is least scattered  
b]all the colours of white light are scattered away  
c]blue colour is scattered most  
d]red colour is scattered most

21) An electric bulb marked 40w-200v is used in a circuit of supply 100v. Its power is \_\_\_\_\_.

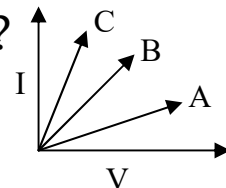
- a]100W                      b]40W                      c]20W                      d]10W

22) A multimeter is used to measure current only

- a]resistance only                      b]voltage only  
c]current only                      d]current, resistance and voltage

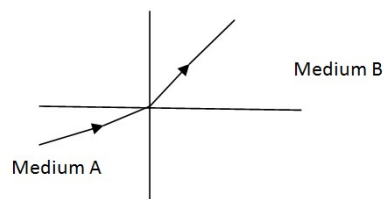
23) The V-I graphs of three resistors A,B and C are as shown in figure. Which resistor has maximum resistance?

- a]A                      b]B  
c]C                      d]All three has equal resistance



24) A light ray enters from medium A to medium B as shown in the figure .the refractive index of medium A relative to B will be

- a]Greater than unity  
b]Less than unity  
c]Equal to unity  
d]Zero



25) Which colour is at the lower end of the visible spectrum?

- a]Red                      b]Green                      c]Violet                      d]Yellow

26) \_\_\_\_\_ represents voltage.

- a]  $\frac{\text{work done}}{\text{current} \times \text{time}}$                       b]  $\frac{\text{Work done} \times \text{time}}{\text{current}}$   
c]Work done X charge                      d]Work done X charge X time

27) There are three copper wires of length and sectional areas (L,A), (2L,A/2), (L/2,2A). In which case is the resistance minimum?

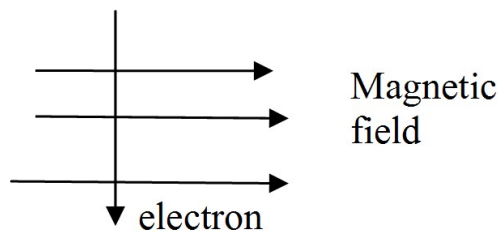
- a]Wire of cross sectional area A/2  
b]Wire of cross sectional area A  
c]Wire of cross sectional area 2A  
d]It is of same in all the three cases.

28) When a charged particle moving with a velocity V is subjected to a magnetic field B, the force on it is non zero. This implies that:

- a]Angle between them is either  $0^\circ$  or  $180^\circ$   
b]Angle between them is necessarily  $90^\circ$   
c]Angle between them can have any value other than  $90^\circ$   
d]Angle between them can have any value other than  $0^\circ$  or  $180^\circ$

29) An electron enters a magnetic field at right angles to it as shown in the figure. The direction of the force acting on the electron will be

- a] to the right
- b] out of the page
- c] to the left
- d] into the page



30) A dynamo

- a] creates mechanical energy
- b] converts electrical energy into mechanical energy
- c] converts mechanical energy into electrical energy
- d] creates electrical energy

### CHEMISTRY [30]

31) Milk of magnesia is

- a]  $MgO$
- b]  $MgCO_3$
- c]  $Mg(OH)_2$
- d]  $MgSO_4$

32) Which salt removes hardness of water

- a] Washing soda
- b] Nitre
- c] Lime stone
- d] Zinc Carbonate

33) Functional group in carboxylic acid is

- a]  $-CHO$
- b]  $-COOH$
- c]  $CONH_2$
- d]  $>CO$

34) Ester having smell of jasmine is

- a] amyl acetate
- b] ethyl acetate
- c] octyl acetate
- d] benzyl acetate

35) The mineral Sylvan is the ore of which metal?

- a] Sodium
- b] Potassium
- c] Magnesium
- d] Silver

36) \_\_\_\_\_ is the main gangue of hematite.

- a]  $H_2O$
- b]  $Si$
- c]  $SiO_2$
- d]  $Fe_2O_3$

37) An element which do not show allotropy is

- a] Carbon
- b] Sulphur
- c] Phosphorus
- d] Fluorine

38) Which gas is known as laughing gas?

- a]  $N_2O$
- b]  $NO_2$
- c]  $No$
- d]  $No_3$

39) An alkyne has 8 carbon atoms. The number of hydrogen atoms in it is

- a] 8
- b] 16
- c] 18
- d] 14

- 40) The process of calcinations is used for  
a) Carbonate ores                      b) Sulphide ores  
c) nitrate ores                          d) Sulphate ores
- 41) Which of the following is more reactive than hydrogen?  
a) Copper              b) Calcium              c) Mercury              d) Silver
- 42) Which of the following oxides is acidic in nature?  
a) Sodium Oxide                      b) Iron Oxide  
c) Calcium Oxide                      d) Sulphur dioxide
- 43) Which of the following salt does not contain water of crystallization  
a) Blue vitriol                          b) Gypsum  
c) Baking Soda                          d) Washing Soda
- 44) Which of the following is acidic in nature?  
a) lime juice              b) limewater              c) human blood              d) antacid
- 45) To protect tooth decay, we are advised to brush our teeth regularly. The nature of tooth paste commonly used is  
a) acidic                      b) neutral                      c) basic                      d) corrosive
- 46) Which of the following does not form an acid salt?  
a) Phosphoric acid                      b) Carbonic acid  
c) hydrochloric acid                      d) Sulphuric acid
- 47) Brine is a concentrated aqueous solution of  
a) NaCl                      b) Na<sub>2</sub>CO<sub>3</sub>                      c) BaCl<sub>2</sub>                      d) ZnCl<sub>2</sub>
- 48) Which among the following is a deliquescent salt?  
a) Calcium chloride                      b) Auric chloride  
c) Aluminium carbonate                      d) Zinc sulphate
- 49) The main constituent in talcum powder is  
a) Aluminium oxide                      b) Zinc oxide  
c) Calcium oxide                          d) Barium oxide
- 50) Identify the acid used to make dynamite.  
a) Hydrochloric acid                      b) Phosphoric acid  
c) Sulphuric acid                          d) Adipic acid
- 51) Plaster of Paris is made from  
a) lime stone                              b) slacked lime  
c) quick lime                              d) gypsum
- 52) The correct decreasing order of the metals in the activity series is  
a) Ca, Mg, Ni, Fe                          b) Ni, Ca, Mg, Fe  
c) Ca, Mg, Fe, Ni                          d) Mg, Ca, Fe, Ni

- 53) Which of the following is not an ionic compound?  
a) Calcium oxide                      b) Hydrogen chloride  
c) Sodium chloride                    d) Magnesium oxide
- 54) Solder is an alloy of  
a) tin and zinc                          b) lead and tin  
c) lead and copper                      d) tin,carbon and zinc
- 55) Which of these liquids can be used as a grease solvent?  
a) Vinegar                                b) Lime water  
c) Ammonia solution                    d) Orange juice
- 56) Which gas is used in coloured display sign boards?  
a) Neon                                    b) Argon  
c) Sodium vapour                        d) Helium
- 57) The compound which is used to regulate the setting lime of cement is  
a) Plaster of Paris                      b) Gypsum  
c) Calcium oxide                        d) Calcium carbonate
- 58) Amalgams are the alloy of  
a) Ag                                        b) Au                                        c) Cu                                        d) Hg
- 59) Marsh gas is  
a) Carbon dioxide                        b) Sulphur dioxide  
c) Butane                                    d) Methane
- 60) Soaps are obtained from oils and fats by  
a) fermentation                          b) esterification  
c) saponification                         d) carbonization


### **BIOLOGY [30]**

- 61) Which of the following constitute a food chain?  
a) Grass ,wheat, mango    b) Grass, Goat, Human  
c) Goat, Cow, Elephant    d) Grass, Fish, Goat
- 62) Khadins,Bundhis,Ahars and katas are ancient structures that are examples for  
a) Grass storage                          b) Wood storage  
c) Water harvesting                      d) Soil conservation
- 63) Which of the following are exhaustible resources?  
a) Air and clay                            b) Air and minerals  
c) Minerals and fossils                  d) Rain and fossil fuels



- 64) Disposable plates should not be used because  
a] They are made of material with light weight  
b] They are made of toxic material  
c] They are made of bio degradable materials  
d] They are made of non bio degradable materials
- 65) UV radiations affect human being by causing  
1] Peptic ulcers  
2] Increased incidence of cataract eyes  
3] Increased incidence of skin cancer  
4] damage to kidneys  
a] 1 & 2                      b] 2 & 3                      c] 3 & 4                      d] 1 & 4
- 66) Which one of the following is the substance for enzyme pepsin ?  
a] starch                      b] proteins                      c] sugar                      d] fats
- 67) Flow of energy in an ecosystem is always  
a] Unidirectional                      b] Bidirectional  
c] Multi directional                      d] No particular directional
- 68) Four chambered heart is present in  
a] Fishes                      b] Ambhians  
c] Reptiles                      d] Birds and mammals
- 69) Which part of the alimentary canal receives bile from the liver ?  
a] Stomach                      b] Small intestine  
c] Large intestine                      d] Oesophagus
- 70) Which is the correct sequence of air passage during inhalation?  
a] Nostrils → larynx → pharynx → trachea lungs  
b] Nasal passage → trachea → pharynx → larynx → alveoli  
c] Nostrils → pharynx → larynx → trachea → alveoli  
d] Larynx → nostrils → pharynx → lungs
- 71) The procedure used in artificial kidney in place of normal is called  
a] Osmoregularisis                      b] Cardiac cycle  
c] Dialysis                      d] Electrocardiograph



- 83) In Rhizopus tubular thread like structure bearing sporangia at their tips are called  
a]filaments      b]hyphae      c]rhyzoids      d]roots
- 84) Which among the following disease not sexually transmitted?  
a]Syphilis      b]Hepatitis      c]HIV-AIDS      d]Gonorrhoea
- 85) The figure given have shows  
a]Amoeba undergoes binary fission  
b]Yeast undergoes binary fission  
c]Yeast undergoes budding  
d]Amoeba undergoes budding
- 
- 86) According to the evolutionary theory formation of a species is generally due to  
a]sudden creation by nature  
b]accumulation of variations over several generations  
c]clones formed during asexual reproduction  
d]movement of individuals from one habit to another
- 87) Exchange of genetic material takes place in  
a]vegetative propagation      b]asexual reproduction  
c]sexual reproduction      d]budding
- 88) Thorn of Bougainvillea and tendril of Cucurbita are examples of  
a]vestigial organs      b]retrogressive evolution  
c]analogous organs      d]homologous organs
- 89) Analogy is based on  
a]convergent evolution      b]divergent evolution  
c]both a and b      d]neither a and b
- 90) Each stoma opens into  
a]a small vesicle      b]substomatal air chamber  
c]chamber filled with water      d]haustorium

### GENERAL KNOWLEDGE [10]

- 91) World Aids Day is observed every year on  
a] August 1      b]November 1  
c] January 1      d] December 1

- 92) Neyveli in Tamil Nadu is famous for  
a] glass bangles b] tobacco c] lignite d] cement
- 93) Shigmo is a festival celebrated in which state?  
a] Karnataka b] Hariyana c] Punjab d] Goa
- 94) Which country is known as the Land of Earthquakes?  
a] Nepal b] China c] Japan d] Rome
- 95) Which organisation is the largest vaccine suppliers of the world?  
a] UNESCO b] UNICEF c] WHO d]NATO
- 96) Indian Military Academy is situated in  
a] Pune b] New Delhi c] Gujarat d] Kolkotta
- 97) The blue ring in the Olympics Circle represents  
a] Africa b] America c] Europe d] Asia
- 98) In which state is the Mejia Thermal Power Station situated?  
a] Hariyana b] West Bengal  
c] Maharashtra d] Gujarat
- 99) The National game of Malasia is  
a] hockey b] Football  
c] badminton d] cricket
- 100) Wings of Fire is written by  
a] Lalbahadur Shastri b] Dr. A. P.J Abdul Kalam  
c] Rabindra Nath Tagore d] Dr. Rajendra Prasad