Q1. Refractive indices of water, sulphuric acid, glass and carbon disulphide are 1.33, 1.43, 1.53 and 1.63 respectively. the light travels slowest in: **1 Mark**

A Sulphuric acid. **B** Glass. **C** Water. **D** Carbon disulphide.

Q2. Which of the following colour of white light is least deviated by the prism? **1 Mark**

A Green. **B** Violet. **C** Indigo. **D** Yellow.

Q3. Which one of the following materials cannot be used to make a lens? **1 Mark**

A Water. **B** Glass. **C** Plastic. **D** Clay.

Q4. Which one of the following is not renewable energy technology? **1 Mark**

A Solar cells. **B** Windmills. **C** Nuclear power. **D** Tidal power.

Q5. The red colour of the sun at the time of sunrise and sunset is because: **1 Mark**

A Red colour is least scattered. **B** Blue colour is least scattered.
C Red colour is most scattered. **D** Blue colour is most scattered.

Q6. A real image of an object is to be obtained. The mirror required for this purpose is: **1 Mark**

A Convex. **B** Concave.
C Plane. **D** Either convex or concave.

Q7. If the resistance of a certain copper wire is 1Ω, then the resistance of a similar nichrome wire will be about: **1 Mark**

A $25O$ **B** $30O$ **C** $60O$ **D** $45O$

Q8. A spherical mirror and a spherical lens each have a focal length of, -15cm. The mirror and the lens are likely to be: **1 Mark**

A Both concave. **B** Both convex.
C The mirror is concave but the lens is convex. **D** The mirror is convex but the lens is concave.

Q9. Which one of the following statements is not true? **1 Mark**

A In a house circuit, lamps are used in parallel.
B Switches, fuses and circuit breakers should be placed in the neutral wire.
C An electric iron has its earth wire connected to the metal case to prevent the user receiving a shock.
D When connecting a three-core cable to a 13 three-pin plug, the red wire goes to the live pin.

Q10. The speed of light in substance X is 1.25×10^8 m/ s and that in air is 3×10^8 m/ s. The refractive index of this substance will be: **1 Mark**

A 2.4 **B** 0.4 **C** 4.2 **D** 3.75

Q11. Linear magnification (m) produced by a rear view mirror fitted in vehicles: **1 Mark**

A Is equal to one. **B** Is less than one.
C Is more than one. **D** In be more less than one depending on the position of object.

Q12. In a filament type light bulb, most of the electric power consumed appears as: **1 Mark**

A Visible light. **B** Infra-red-rays. **C** Ultraviolet rays. **D** Fluorescent light.

Q13. Due to atmospheric refraction of sunlight, the time from sunrise to sunset is lengthened by about: **1 Mark**

A 6 minutes. **B** 2 minutes. **C** 4 minutes. **D** 5 minutes.

Q14. The refractive indices of four substance P, Q, R and S are 1.50, 1.36, 1.77 and 1.31 respectively. The speed of light is the maximum in the substance: **1 Mark**

A P **B** Q **C** R **D** S

Q15. The major component of biogas is: **1 Mark**

A Hydrogen. **B** Butane. **C** Hydrogen sulphide. **D** Methane.

Q16. A solar cooker may not cook food if. **1 Mark**

A The solar cooker is not placed in the shade. **B** The glass sheet cover of solar cooker is not closed.
C A convex mirror reflector is not used. **D** The food containers of insulting material are not used.

Q17. The device used for producing electric current is called a: **1 Mark**

A Generator. **B** Galvanometer. **C** Ammeter. **D** Motor.

Q18. The rise of sea-water during high tide is caused by the gravitational pull of the: **1 Mark**

A Sun. **B** Earth. **C** Moon. **D** Mars.

Q19. A burning candle whose flame is 1.5cm tall is placed at a certain distance in front of a convex lens. An image of candle flame is received on a white screen kept behind the lens. The image of flame also measures 1.5cm. If f is the focal length of convex lens, the candle is placed: **1 Mark**

A At f. **B** Between f and 2f.
C At 2f. **D** Beyond 2f.

Q20. Geothermal energy is produced by the: **1 Mark**

A Fission of radioactive materials. **B** Burning of coal inside the coal mines.
C Combustion of natural gas deep inside the earth. **D** Fusion of radioactive substances.

Q21. The SI unit of energy is: **1 Mark**

A Joule. **B** Coulomb. **C** Watt. **D** Ohm-metre.

Q22. The energy in the reactor of a nuclear power station is produced by the process of: **1 Mark**

A Nuclear diffusion. **B** Nuclear fission. **C** Nuclear fusion. **D** Nuclear fermentation.

Q23. The resistivity of a certain material is $0.6\Omega\ \mathrm{m}$. The material is most likely to be: **1 Mark**

A An insulator. **B** A superconductor. **C** A conductor. **D** A semiconductor.

Q24. The splitting up of white light into seven colours on passing through a glass prism is called: **1 Mark**

A Refraction. **B** Deflection. **C** Dispersion. **D** Scattering.

Q25. Which of the following is used as a moderator in the reactor of a nuclear power station? **1 Mark**

A Liquid sodium. **B** Boron. **C** Graphite. **D** Carbon dioxide.

Q26. Sunset is red because at that time the light coming from the sun has to travel: **1 Mark**

A Lesser thickness of earth's atmosphere. **B** Greater thickness of earth's atmosphere.
C Varying thickness of earth's atmosphere. **D** Along the horizon.

Q27. Which of the following coloured light has the least speed in glass prism? **1 Mark**

A Violet. **B** Yellow. **C** Red. **D** Green.

Q28. The other name of potential difference is: **1 Mark**

A Ampereage. **B** Wattage. **C** Voltage. **D** Potential energy.

Q29. At a hydro power plant: **1 Mark**

A Kinetic energy possessed by stored water is converted into electrical energy. **B** Electrical is extracted from water.
C Water is converted into steam to turn turbines and produce electricity. **D** Potential energy possessed by stored water is converted into electricity.

Q30. An electrical appliance has a resistance of 25Ω. When this electrical appliance is connected to a 230V supply line, the current passing through it will be: **1 Mark**

A 0.92A. **B** 2.9A. **C** 9.2A. **D** 92A.

Q31. There are four fuels which all contain only carbon and hydrogen. The fuel having highest calorific value will be one which has: **1 Mark**

A More of carbon but less of hydrogen. **B** Less of carbon but more of hydrogen.
C Equal proportions of carbon and hydrogen. **D** Less of carbon as well as less of hydrogen.

Q32. The magnetic field inside a long straight solenoid carrying current: **1 Mark**

A Is zero. **B** Ddecreases as we move towards its end.
C Increases as we move towards its end. **D** Is the same at all points.

Q33. An examples of a renewable source of energy is: **1 Mark**

A Petrol. **B** Natural gas. **C** Biogas. **D** Kerosene.

Q34. The fuel which is not used at thermal power plants is: **1 Mark**

A Coal. **B** Uranium. **C** Natural gas. **D** Fuel oil.

Q35. Which of the following fuels has the highest calorific value? **1 Mark**

A Natural gas. **B** Methane gas. **C** Hydrogen gas. **D** Biogas.

Q36. After testing the eyes of a child, the optician has prescribed the following lenses for his spectacles: **1 Mark**
Left eye: +2.00D
Right eye: +2.25D

The child is suffering from the defect of vision called:

A Short-sightedness. **B** Long-sightedness. **C** Cataract. **D** Presbyopia.

Q37. The world's known coal reserves are expected to last for about: **1 Mark**

A 200 years. **B** 400 years. **C** 500 years. **D** 100 years.

Q38. The figure given below shows three resistors? **1 Mark**

Their combined resistance is:

A $1\frac{5}{7}\Omega$ **B** 14Ω **C** $6\frac{2}{3}\Omega$ **D** $7\frac{1}{2}\Omega$

Q39. The magnification produced by a spherical mirror and a spherical lens is +0.8. **1 Mark**

A The mirror and lens are both convex.
B The mirror and lens are both concave.
C The mirror is concave but the lens is convex.
D The mirror is convex but the lens is concave.

Q40. The radiations present in sunlight which make a solar cooker work are: **1 Mark**

A Visible light rays. **B** Ultraviolet rays. **C** Comic rays. **D** Infrared rays.

Q41. With both eyes open, a person's field of view is about: **1 Mark**

A 90° **B** 50° **C** 180° **D** 360°

Q42. A car headlight bulb working on a 12V car battery draws a current of 0.5A. The resistance of the light bulb is: **1 Mark**

A $0.5O$ **B** $6O$ **C** $12O$ **D** $24O$

Q43. A convex lens has a focal length of 10cm. At which of the following position should an object be placed so that this convex lens may act as a magnifying glass? **1 Mark**

A 15cm **B** 7cm **C** 20cm **D** 25cm

Q44. Which of the following is not a fossil fuel? **1 Mark**

A Coal. **B** Petroleum gas. **C** Biogas. **D** Natural gas.

Q45. The refractive indices of four materials A, B, C and D are 1.33, 1.43, 1.71 and 1.52 respectively. When the light rays pass from air into these materials, they refract the maximum in: **1 Mark**

A Material A. **B** Material B. **C** Material C. **D** Material D.

Q46. Which of the following can undergo nuclear fusion reaction? **1 Mark**

A Uranium. **B** Deuterium. **C** Barium. **D** Krypton.

Q47. A strong bar magnet is placed vertically above a horizontal wooden board. The magnetic lines of force will be: **1 Mark**

A Only in horizontal plane around the magnet.
B Only in vertical plane around the magnet.
C In horizontal as well as in vertical planes around the magnet.
D In all the planes around the magnet.

Q48. A converging lens is used to produce an image of an object on a screen,object on a screen. What change is needed for the image to be formed nearer to the lens? **1 Mark**

A Increase the focal length of the lens.
B Insert a diverging lens between the lens and the screen.
C Increase the distance of the object from the lens.
D Move the object closer to the lens.

Q49. The heat produced in a wire of resistance 'x' when a current 'y' flows through it in time 'z' is given by: **1 Mark**

A $x^2 \times y \times z$.
B $x \times z \times y^2.y$
C $\times z^2 \times x$.
D $y \times z \times x$.

Q50. A convex lens of focal length 10cm is placed in contact with a concave lens of focal length 20cm. The focal length of this combination of lenses will be: **1 Mark**

A +10cm **B** +20cm **C** -10cm **D** -20cm

Q51. An induced current is produced when a magnet is moved into a coil. The magnitude of induced current does not depend on: **1 Mark**

A The speed with which the magnet is moved.
B The number of turns of the coil.
C The resistivity of the wire of the coil.
D The strength of the magnet.

Q52. One of the following is not required in the formation of biogas in a biogas plant. This is: **1 Mark**

A Cow-dung. **B** Water. **C** Oxygen. **D** Anaerobic bacteria.

Q53. Which of the following is likely to be the correct wattage for an electric iron used in our homes? **1 Mark**

A 60W. **B** 250W. **C** 850W. **D** 2000W.

Q54. The heat produced by passing an electric current through a fixed resistor is proportional to the square of: **1 Mark**

A Magnitude of resistance of the resistor.
B Temperature of the resistor.
C Magnitude of current.
D Time for which current is passed.

Q55. Which of the following statements is incorrect regarding magnetic field lines? **1 Mark**

A The direction of magnetic field at a point is taken to be the direction in which the north pole a magnetic compass needle points.

B Magnetic field lines are closed curves.

C If magnetic field lines are parallel and equidistant, they represent zero field strength.

D Relative strength of magnetic field is shown by the degree of closeness of the field lines.

Q56. The main constituent of petroleum gas is: **1 Mark**

A Methane. **B** Ethane. **C** Butane. **D** Propane.

Q57. Though a woman can see the distant object clearly, she cannot see the nearby objects clearly. She is suffering from the defect of vision called: **1 Mark**

A Long-sight. **B** Short-sight. **C** Hind-sight. **D** Mid-sight.

Q58. The person is having a defect of vision called: **1 Mark**

A Presbyopia. **B** Myopia. **C** Astigmatism. **D** Hypermetropia.

Q59. A young man has to hold a book at arm's length to be able to read it clearly. The defect of vision is: **1 Mark**

A Astigmatism. **B** Myopia. **C** Presbyopia. **D** Hypermetropia.

Q60. When the area of cross-section of a conductor is doubled, its resistance becomes: **1 Mark**

A Double. **B** Half. **C** Four time. **D** One-fourth.

Q61. A wire of resistance R_1 is cut into five equal pieces. These five pieces of wire are then connected in parallel. If the resultant resistance of this combination be R_2, then the ratio $\frac{R_1}{R_2}$ is: **1 Mark**

A $\frac{1}{25}$ **B** $\frac{1}{5}$ **C** 5 **D** 25

Q62. A magnet attracts: **1 Mark**

A Plastics. **B** Any metal. **C** Aluminium. **D** Iron and steel.

Q63. An object is 0.09m from a magnifying lens and the image is formed 36cm from the lens. The magnification produced is: **1 Mark**

A 0.4 **B** 1.4 **C** 4.0 **D** 4.5

Q64. The refractive indexes of four substances P, Q, R and S are 1.77, 1.50, 2.42 and 1.31 respectively. When light travelling in air is incident on these substances at equal angles, the angle of refraction will be the maximum in: **1 Mark**

A Substance P. **B** Substance Q. **C** Substance R. **D** Substance S.

Q65. The back face of a circular loop of wire is found to be south magnetic pole. The direction of current in this face of the circular loop of wire will be: **1 Mark**

A Towards south. **B** Clockwise. **C** Anticlockwise. **D** Towards north.

Q66. The non-renewable source of energy among the following is: **1 Mark**

A Hydroelectricity. **B** Sewage gas. **C** Natural gas. **D** Gobar gas.

Q67. The real image formed by a concave mirror is larger than the object when object is: **1 Mark**

A At a distance equal to radius of curvature.

B At a distance less than the focal length.

C Between focus and centre of curvature.

D At a distance greater than radius of curvature.

Q68. n order to obtain a magnification of, −0.6 (minus 0.6) with a concave mirror, the object must be placed: **1 Mark**

A At the focus.

B Between pole and focus.

C Between focus and centre of curvature.

D Beyond the centre of curvature.

Q69. A man driving a car can read a distant road sign clearly but finds difficulty in reading the odometer on the dashboard of the car. Which of the following statement is correct about this man. **1 Mark**

A The near point of his eyes has receded away.

B The near point of his eyes has come closer to him.

C The far point of his eyes has receded away.

D The far point of his eyes has come closer to him.

Q70. When an object is kept at any distance in front of a concave lens, the image formed is always: **1 Mark**

A Virtual, erect and magnified.

B Virtual, inverted and diminished.

C Virtual, erect and diminished.

D Virtual, erect and same size as object.

Q71. Having two eyes gives a person: **1 Mark**

A Deeper field of view. **B** Coloured field of view. **C** Rear field of view. **D** Wider field of view.

Q72. The animals called predators have: **1 Mark**

A Both the eyes on the sides.

B One eye on the side and one at the front.

C One eye on the front and one at the back.

D Both the eyes at the front.

Q73. **1 Mark**

The maximum number of 40W tube-lights connected in a parallel which can safely be run from a 240V supply with a 5A fuse is:

A 5 **B** 15 **C** 20 **D** 30

Q74. The mirror which can form a magnified image of an object is: **1 Mark**

A Convex mirror. **B** Plane mirror.
C Concave mirror. **D** Both convex and concave mirror.

Q75. If the current through a floodlamp is 5A, what charge passed in 10 seconds?. **1 Mark**

A 0.5C. **B** 2C. **C** 5C. **D** 50C

Q76. In order to obtain a magnification of, −1.5 with a concave mirror of focal length 16cm, the object will have to be placed at a distance. **1 Mark**

A Between 6cm and 16cm. **B** Between 32cm and 16cm. **C** Between 48cm and 32cm. **D** Beyond 64cm.

Q77. The part of box-type solar cooker which is responsible for producing greenhouse effect is: **1 Mark**

A Plane mirror reflector. **B** Black coating inside the box.
C Glass sheet cover. **D** Utensils placed in the cooker box.

Q78. A diverging lens is used in: **1 Mark**

A A magnifying glass. **B** A car to see objects on rear side.
C Spectacles for the correction of short sight. **D** A simple camera.

Q79. The resistance of a wire of length 300m and cross-section area 1.0mm^2 made of material of resistivity $1.0 \times 10 - 7\Omega$ m is: **1 Mark**

A $2O$ **B** $3O$ **C** $20O$ **D** $30O$

Q80. If a spherical lens has a power of, -0.25D, the focal length of this lens will be: **1 Mark**

A -4cm **B** -400mm **C** -4m **D** -40cm

Q81. One coulomb charge is equivalent to the charge contained in: **1 Mark**

A 2.6×10^{19} electrons. **B** 6.2×10^{19} electrons.
C 2.65×10^{18} electrons. **D** 6.25×10^{18} electrons.

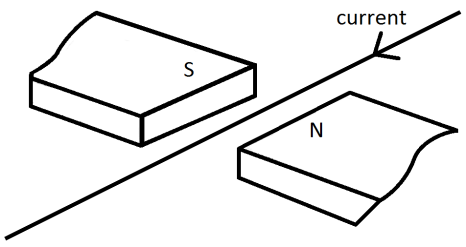
Q82. An electric generator converts: **1 Mark**

A Electrical energy into mechanical energy. **B** Mechanical energy into heat energy.
C Electrical energy into chemical energy. **D** Mechanical energy into electrical energy.

Q83. An electric fuse works on the: **1 Mark**

A Chemical effect of current. **B** Magnetic effect of current.
C Lighting effect of current. **D** Heating effect of current.

Q84. A current flows in a wire running between the S and N poles of a magnet lying horizontally as shown in Figure below: **1 Mark**



The force on the wire due to the magnet is directed:

A Fron N to S. **B** From S to N. **C** Vertically downwards. **D** Vertically upwards.

Q85. A boy is standing in front of and close to a special mirror. He finds the image of his head bigger than normal, the middle part of his body of the same size, and his legs smaller than normal. The special mirror is made up of three types of mirrors in the following order from top downwards: **1 Mark**

A Convex, Plane, Concave. **B** Plane, Convex, Concave. **C** Concave, Plane, Convex. **D** Convex, Concave, Plane.

Q86. A soft iron bar is inserted inside a current-carrying solenoid. The magnetic field inside the solenoid: **1 Mark**

A Will decrease. **B** Will increase. **C** Will become zero. **D** Will remain the same.

Q87. The control rods used in the reactor of a nuclear power plant are made of: **1 Mark**

A Steel. **B** Graphite. **C** Uranium. **D** Boron.

Q88. The focal lengths of four convex lenses P, Q, R and S are 20cm, 15cm, 5cm and 10cm, respectively. The lens having greatest power is: **1 Mark**

A P **B** Q **C** R **D** S

Q89. If R is the radius of curvature of a spherical mirror and f is its focal length, then: **1 Mark**

A R = f **B** R = 2f

C $R = \frac{f}{2}$ **D** R = 3f

Q90. The term " accommodation" as applied to the eye, refers to its ability to: **1 Mark**

A Control the light intensity falling on the retina. **B** Erect the inverted image formed on the retina.
C Vary the focal length of the lens. **D** Vary the distance between the lens and retina.

Q91. In order to obtain a magnification of −2 (minus 2) with a concave mirror, the object should be placed: **1 Mark**

A Between pole and focus. **B** Between focus and centre of curvature.
C At the centre of curvature. **D** Beyond the centre of curvature.

Q92. A person cannot see the distant objects clearly (though he can see the nearby objects clearly). He is suffering from the defect of vision called: **1 Mark**

A Cataract. **B** Hypermetropia. **C** Myopia. **D** Presbyopia.

Q93. The animals of prey have: **1 Mark**

A Two eyes at the front. **B** Two eyes at the back.
C Two eyes on the sides. **D** One eye at the front and one on the side.

Q94. A beam of white light falls on a glass prism. The colour of light which undergoes the least bending on passing through the glass prism is: **1 Mark**

A Violet. **B** Red. **C** Green. **D** Blue.

Q95. A D.C. generator is based on the principle of: **1 Mark**

A Electrochemical induction. **B** Electromagnetic induction.
C Magnetic effect of current. **D** Heating effect of current.

Q96. Consider two statements A and B given below: **1 Mark**

1. Real image is always inverted.
2. Virtual image is always erect.

Out of these two statements:

A Only A is true. **B** Only B is true. **C** Both A and B are true. **D** None is true.

Q97. If a magnification of, -1(minus 1) is obtained by using a converging lens, then the object has to be placed: **1 Mark**

A Within f. **B** At 2f. **C** Beyond 2f. **D** At infinity.

Q98. Whatever be the position of the object, the image formed by a mirror is virtual, erect and smaller than the object. The mirror then must be: **1 Mark**

A Plane. **B** Concave.
C Convex. **D** Either concave or convex.

Q99. f the amount of electric charge passing through a conductor in 10 minutes is 300C, the current flowing is: **1 Mark**

A 30A. **B** 0.3A. **C** 0.5A. **D** 5A.

Q100. The heat energy released during nuclear fission and fusion is due to the: **1 Mark**

A Conversion of stored chemicals into energy. **B** Conversion of momentum into energy.
C Conversion of mass into energy. **D** Conversion of magnetism into energy.