AP – POLYCET

2016

Time : 2 Hours **Total Marks : 120**

SECTION – II

Physics

61. The distance between the pole and focal point of a concave mirror is 15 cm. The radius of curvature is
    A. 1.5 cm
    B. 15 cm
    C. 30 cm
    D. 45 cm
62. Read the following two statements and pick the correct answer :
    (a) Real image can be captured on screen.
    (b) Virtual image can be captured on screen.
    A. Both (a) and (b) are true
    B. Both (a) and (b) are false
    C. Only (a) is true

D. Only (b) is true

63. The filament of an electric bulb is usually made of
    A. copper
    B. germanium
    C. steel
    D. tugnstein
64. 1 joule/ 1 coulomb is
    A. 1 ampere
    B. 1 watt
    C. 1 weber
    D. 1 volt
65. The drift velocity of electrons in copper wire is about
    A. 0.07 mm/s
    B. 0.7 mm/s
    C. 7 mm/s
    D. 70 mm/s
66. Three resistors each of value 3 Q are connected in parallel combination. Their equivalen resistance is
    A. 9 Ω
    B. 1 Ω

C. 0.33 Ω
D. 1.5 Ω

67. At constant temperature, the ratio of potential difference to current is not constant for till following
A. iron
B. copper
C. Light Emitting Diode (LED)
D. aluminium

68. A bulb of resistance 200 Ω is connected to a 10 V battery. The power consumption is
A. 2 W
B. 20 W
C. 0.5 W
D. 0.05 W

69. A lemon kept in a glass of water appears to be bigger than its actual size. This is due to
A. reflection
B. refraction
C. total internal reflection
D. dispersion

70. If the critical angle is 45°, the refractive index of the material is

A. 0.5

B. 0.707

C. 1.

D. 1.414

71. If i and r be the angles of incidence and refraction respectively, when the light ray travels from glass to, air, then

A. i = r

B. I > r

C. I <r

D. None

72. Paraxial rays

A. are perpendicular to the principal axis

B. are very close to the principal axis

C. make an angle of 45° to the principal axis

D. pass through the principal axis

73. which one among the following cases, the convex lens does not give a real image?

A. When the object is placed between the focal point and optic centre

B. When the object is placed beyond the centre of curvature

C. When the object is placed between the centre of curvature and focal point

D. When the object is placed on the centre of curvature

74. Irrespective of the position of the object on the principal axis, a concave lens gives an image of nature

A. real, inverted

B. real, erected

C. virtual, inverted

D. virtual, erected

75. If a convex lens has its object and image distances equal (say x), the focal length is equal to

A. x

B. x /2

C. 2 / x

D. 0

76. Which part of the human eye helps the eye lens to change its focal length?

A. Retina

B. Pupil

C. Ciliary muscle

D. Cornea

77. For any position of an object in front of the human eye, the image distance is fixed at

A. 1 cm

B. 1.5 cm

C. 2.5 cm

D. 0.25 cm

78. To correct one's hypermetropia defect, the type of lens used is

A. biconvex

B. biconcave

C. concavo-convex

D. planoconcave

79. Read the following two statements and pick the correct answer:

A. Red colour light has low refractive index.

B. Red colour light undergoes low deviation.

1. Both (a) and (b) are true

2. Both (a) and (b) are false

3. only (a) is true

4. only (b) is true

80. Scattering of light involves the process of

A. bending of light at the interface of two media

B. splitting of light into different colours
C. convergence of light rays at the focus
D. re-emission of absorbed light

81. According to Faraday's law, the induced EMF produced in a closed loop is equal to the
A. magnetic flux
B. change of magnetic flux
C. rate of change of magnetic flux
D. cross-sectional area of the loop

82. If B is the magnetic flux density and A is the area of the plane, then the magnetic flux is given by
A. AB
B. B / A
C. A / B
D. A^2B

83. A conductor is moving with a speed of 10 m/s perpendicular to the direction of magnetic field of induction 0.5 T. If the induced EMF is 5 V, then the length of the conductor is
A. 0.25 m
B. 0.01 m
C. 4 m
D. 1 m

84. A metal ring is inserted through the soft iron cylinder which is wounded with copper wire. When DC is supplied between the ends of the coil, then

A. the metal ring is levitated on the coil and stays there

B. the metal ring is levitated and falls down immediately

C. the metal ring rotates round the cylinder at the same position

D. None

85. A charge q is moving with a velocity v in magnetic field of induction B. If the magnetic force acting on charge q is equal to quB, then

A. q is moving parallel to B

B. q is moving perpendicular to B

C. q is moving at an angle of 45^0 to B

D. q is stationary

86. Which among the following is an example for condensation?

A. Water converting into ice

B. Wet cloths getting dried

C. Water converting into vapour

D. Formation of dew

87. 127°C +400K + x = 1000 K. The value of x is
    A. 200 K
    B. 273 K
    C. 473 K
    D. 800 K
88. Which among the following materials has specific heat more than that of ice?
    A. water
    B. Glass
    C. Mercury
    D. Copper
89. Which among the following is used by the dentists to see the image?
    A. convex mirror
    B. concave mirror
    C. plane mirror
    D. convex lens
90. If u and v be the object and image distances for a spherical mirror, then the magnification is
    A. u/v
    B. v/u
    C. -u/v

D. -v/u