(iii) On increasing temperature of a liquid generally it's surface tension

(a) decreases   (b) increases

(c) remains same   (d) increases than decreases

Ans.(a)

(iv) Which of the following is correct relation for critical velocity

(a) $V_c = \dfrac{kr}{\eta\rho}$ (b) $V_c = \dfrac{k\rho}{\eta r}$

(c) $V_c = \dfrac{\eta r}{k\rho}$ (d) $V_c = \dfrac{k\eta}{r\rho}$

Ans.(c)

(v) Which one is the correct relation between the three co-efficients of expansion.

(a) $\dfrac{\alpha}{3} = \dfrac{\beta}{2} = \gamma$ (b) $\dfrac{\alpha}{2} = \dfrac{\beta}{3} = \gamma$

(c) $\dfrac{\alpha}{1} = \dfrac{\beta}{2} = \dfrac{\gamma}{3}$ (d) $\dfrac{\alpha}{2} = \dfrac{\beta}{6} = \dfrac{\gamma}{9}$

Ans.(c)

(vi) In adiabatic process, which among the following remains constant.

(a) Heat   (b) Temperature

(c) Volume   (d) Pressure

Ans.(d)

(vii) If refractive index (R.I) of water with respect to air is 4/3 and R.I of glass with respect to air is 3/2 then R.I of glass with respect to water is

(a) $\dfrac{8}{9}$ (b) $\left(\dfrac{4}{3} + \dfrac{3}{2}\right)$

(c) $\dfrac{9}{8}$ (d) None

Ans. (c)

(viii) Emission of LASER is

(a) Spontaneous   (b) Regular

(c) In packets   (d) Stimulated

Ans.(d)

(ix) Nature of light waves in air is

(a) Transverse   (b) Longitudinal

(c) Transverse & Longitudinal both

(d) None of the above

Ans.(c)

(x) The number of photo electrons from a metal depends upon

(a) Frequency of incident radiation

(b) Wavelength of incident radiation

(c) Velocity of incident radiation

(d) Intensity of incident radiation

Ans.(d)

Q.1 Choose the correct answer in the following question :

(i) S.I. unit of co-efficient of thermal conductivity is

(a) Wkm   (b) $Wk^{-1}m^{-1}$

(c) $Jkg^{-1}s^{-1}$ (d) $Jkg^{-1}k^{-1}$

Ans.(b)

(ii) If a wire is stretched to doubled its length, it's strain is

(a) 2   (b) 1/2

(c) 1   (d) 4

Ans.(c)

Q2. What do you mean by accuracy and precision ? Explain error and its various types?

Q3. State and explain Hooke's law & various modulus of elasticity ? Also, draw a stress strain diagram and label the various points.

Ans. Refers to Chapter 5.1 Q.no.2,5 & 6

Q4. Explain optical pumping ? Also, explain with neat diagram, the construction and the working of He-Ne Laser.

Ans.: Out of Syllabus

Q5. Explain isothermal and adiabatic expansion of gas ? Also, explain why have gases two specific heat capacity while solids and liquids have only one ?

Ans. Out of Syllabus

Q6. How is X-ray's produced using coolidge tube explain with diagram. What are the application of X-rays ?

Ans. Out of Syllabus

Q7. Explain stress and its types (at least two types).

Ans. Refers to Chapter 5.1 Q.no. 2,3

Q8. How does chalk obsorb water or ink ? Explain.

Ans.: Refers to Chapter 5.2 Q.no. 6

Q9. What are streamline and turbulent motion ? What are the characterisrics of a stream line motion.

Ans.: Refers to Chapter 5.3 Q.no. 5

Q10. What do you mean by conduction mode of transmission of heat ? Also explain Co-fficient of thermal conductivity.

Ans. Refers to Chapter 6 Q.no. 1 & 3

Q11. Explain how specific heat capacity of a gas at constant pressure is greater than that at constant volume.

Ans.: Out of Syllabus

Q12. Differentiate between free vibration and forced vibration.

Ans.: Refers to Chapter 7.1 Q.no. 6

Q13. Explain construction and working of a photocell?

Ans. Out of Syllabus

Q14. The terminal velocity of raindrop is 30cm/s. Taking the viscosity of air as 1.8×10^{-5} Nm^{-2}s. What is the radius of the rain drop. (density of air $= 1.29$ kg/m^3)

Ans. Refers to Chapter 5.3 (Solved Example- 11)

Q15. What rises in a capillary tube upto a height of 6cm. What will be the rise of water column of radius of the tube is doubled.

Q16. What amount of heat will flow out per second the thr a wooden window of size $3m \times 2m$ and thickness 8c temperature of outside room is $30^\circ C$ more than that of i and thermal conductivity of wood is 1.68 w m^{-1} k^{-1}.

Ans. Same as 2013, Q. no : 11

Q17. Pressure of 1.5 mole of a gas at $27^\circ C$ is 10Nm^{-2}, then f out its volume ?

Ans. Out of Syllabus

Q18. Radiation of $6000^\circ A$, wavelength fall on a metal pl of work function 1.8 eV. Calculate the maxim kinetic energy of the emitted electrons 1 eV = J, 10^{-19} J, h = 6.62×10^{-34} Js. 1 $A^\circ = 10^{-10}$m, C = 3 m/s.

Ans.: Out of Syllabus