

CHOITHRAM SCHOOL MANIKBAGH INDORE**CLASS XI Session: 2016-17****Subject: Physics****Allotment Date: 13/01/2017****Assignment No: IV****Submission Date: 17/01/17**

S.N	QUESTION	MARKS	LEVEL
OBJECTIVE TYPE			
1.	State Stefan's law.	1	Knowledge
2.	A glass stopper could be loosened by warming the neck of a bottle. Explain.	1	Understanding
3.	If the radius of a big drop formed is made two times without any change in temperature then what will be the work done?	1	hot
SHORT ANSWER TYPE I			
4.	Why should the lubricant oil be of high viscosity?	2	knowledge
5.	If Y is Yung's modulus of material of a wire calculate the energy stored in the wire per unit volume if applied stress is S.	2	understanding
6.	The speed of a liquid flowing through a pipe increases and its pressure decreases when liquid passes through a narrow constriction in the pipe. Why?	2	logic
7.	100g water is supercooled to -10°C . at this point, due to some disturbance mechanized or otherwise some of it suddenly freezes to ice. What will be the temperature of the resultant mixture and how much mass would freeze? ($s_w = 1 \text{ cal/g}^{\circ}\text{C}$ and $L=80 \text{ cal/g}$)	2	Hot
SHORT ANSWER TYPE II			
8.	Define terminal velocity. Derive the expression for the terminal velocity of a sphere falling through a liquid. What is the terminal velocity of a body in a freely falling system?	3	understanding
9.	State Bernoulli's theorem. Prove that the total energy possessed by a flowing ideal liquid is conserved. Why cars and aeroplanes are streamlined	3	Multi conceptual
10.	Surface tension is the property of a liquid by virtue of which free surface of liquid at rest tries to have minimum surface area. In doing so, the free surface of liquid at rest behaves as if it is covered with a stretched membrane. Surface tension (S) of a liquid is measured by the force (F) acting on unit length of a line l, imagined to be drawn tangentially anywhere on the free surface, Read the above passage and answer the following questions (i) What is the cause of surface tension?(ii) A wire of ring 30 mm diameter resting flat on the surface of a liquid is raised. The pull required is 1.5 gf more before the film breaks than it is after. What is surface tension of the liquid? (iii) What are the implications of this phenomenon in day to day life?	3	Value based
11.	State Bernoulli's theorem. Prove that the total energy possessed by a flowing ideal liquid is conserved. Why cars and aeroplanes are streamlined	5	Logic
12.	Two rods A and B are of equal length. Each rod has the ends at temperature T_1 and T_2 . What is the condition that will ensure equal rates of flow of heat through the rods A and B?	5	Hot