

**CHOITHRAM SCHOOL MANIKBAGH INDORE**

**CLASS XI Session: 2017-18**

**Subject: Physics**  
**Allotment Date: 30/6/2017**

**Assignment No: I**  
**Submission Date: 7/7/16**

Type e S.No	QUESTION	MARKS	LEVEL
<b>OBJECTIVE TYPE</b>			
1.	What should be the angle between two vectors for their resultant to be (i) maximum (ii) minimum?	1	Knowledge
2.	Under what condition the sum of two vectors is equal to their difference?	1	Understanding
3.	What are the properties of two vectors $\vec{a}$ and $\vec{b}$ such that $\vec{a} + \vec{b} = \vec{c}$ and $\vec{a} - \vec{b} = \vec{d}$ ?	1	hot
<b>SHORT ANSWER TYPE I</b>			
4.	The velocity $v$ of a particle is given by $v = At^2 + Bt$ . What are the dimensions of $A$ and $B$ .	2	knowledge
5.	If velocity, force and time are taken to be fundamental quantities find the dimensional formula for (a) Mass and (b) Energy.	2	understanding
6.	The frequency $f$ of a stretched string depends upon the tension $F$ , length $l$ of the string and mass/unit length $\mu$ of the string. Derive the formula for frequency	2	logic
7.	The diagonals of a parallelogram are given by the vectors $5i - 7j + 2k$ , and $i - j + 3k$ . Find the area of the parallelogram.	2	Hot
<b>SHORT ANSWER TYPE II</b>			
8.	Show that the magnitude of resultant of two equal vectors of magnitude 'a' is $2a \cos \frac{\alpha}{2}$ , here $\alpha$ is the angle between the vectors.	3	understanding
9.	Two equal forces act at a point. The square of their resultant is three times their product. Find the angle between them.	3	Multi conceptual
10.	Sita a student of class XII was suffering from malaria. The area is full of mosquitoes. She was not having mosquito net. Her friend Geeta has an extra net. She gave it to Sita. Also she took Gita to a Doctor, got her medicines. After a week Sita became normal (a) Comment upon the qualities of Sita. (b) The mosquito net over a 7 m X 4m bed is 3m high. The net has a hole at one corner of the bed through which a mosquito enters the net. It flies and sits at the diagonally opposite upper corner of the net (i) Find the magnitude of the displacement of the mosquito (ii) Taking the hole as the origin, the length of the bed as the X-axis, its width as the Y-axis and vertically up as the Z-axis, with the components of the displacement vector.	3	Value based
11.	Given $\vec{a} = 3\hat{i} + 4\hat{j} + 5\hat{k}$ and $\vec{b} = 4\hat{i} + 3\hat{j} + 2\hat{k}$ . The magnitudes of $\vec{a}$ and $\vec{b}$ are $5\sqrt{2}$ and $5$ respectively. What is the angle between $\vec{a}$ and $\vec{b}$ ?	5	Logic
12.	Given $\vec{a} = 4\hat{i} - 2\hat{j} + 5\hat{k}$ and $\vec{b} = \hat{i} + 2\hat{j} + \hat{k}$ , what is the vector component of $\vec{a}$ in the direction of $\vec{b}$ and the vector component of $\vec{a}$ in the direction of $\vec{b}$ ?	5	Hot