

MOTION IN A PLANE

General Instructions: Answer all the questions. If you are unable to answer any question, go through the page number that is given against that particular question in the text book. You can find the answer.

Test Paper-I

MAX MARKS: 30

TIME: 90Mts

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| 1 | Differentiate between scalar quantities and vector quantities. | P65 | 2 |
| 2 | Compare path length of an object between two points with that of magnitude of displacement between the same two points. | P66 | 1 |
| 3 | Explain the following briefly. | | 3 |
| | a. Multiplication of vector by real numbers | P66 | |
| | b. Equality of vectors | ,67, | |
| | c. Triangle method of vector addition | 68 | |
| 4 | What is commutative law of vector addition? | P68 | 1 |
| 5 | What is Associative law of vector addition? | P68 | 1 |
| 6 | What is a null vector? Give the physical meaning of a null vector. | P68 | 2 |
| 7 | Give the properties of a null vector. | P68 | 2 |
| 8 | Rain is falling vertically with a speed of 35 ms^{-1} . Winds starts blowing after sometime with a speed of 12 m s^{-1} in east to west direction. In which direction should a boy waiting at a bus stop hold his umbrella? | P69 | 3 |
| 9 | Explain briefly subtraction of vectors. | P68 | 2 |
| 10 | Define a unit vector. How will you represent a unit vector? | P70 | 2 |
| 11 | What are the different ways of specifying a vector in a plane? | P70 | 2 |
| 12 | Find the magnitude and direction of the resultant of two vectors A and B in terms of their magnitudes and angle θ between them. | P72 | 3 |
| 13 | Two vectors A and B in x-y plane are given by $A = Ax\hat{i} + Ay\hat{j}$ and $B = Bx\hat{i} + By\hat{j}$ then find the vector representing the sum of the two vectors. | P71 | 2 |
| 14 | State the parallelogram law of two vectors. | P68 | 1 |

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| 15 | State the following laws. | 2 |
| | a. Law of cosines | P72 |
| | b. Law of sines | |
| 16 | Resolve a vector that lies in x-y plane into its components. | P70 1 |