QUIZEN – Motion in One Dimensions (11P02)

Learning Level 1	***Learning Level 2***	***Learning Level 3***
Q - Remembering (knowledge-based questions) U - Understanding (comprehension-based questions)	I - Applying (application-based questions) Z - Analyzing (analysis-based questions)	*E - Evaluating (evaluation-based questions)* *N - Creating (creation-based questions)*

Learning Level 1

1. Define non-uniform motion.
2. State the equation for average velocity in one dimension.
3. Explain the concept of relative velocity.
4. Define instantaneous velocity.
5. What is the SI unit of acceleration?

Learning Level 2

6. A car accelerates uniformly from rest and reaches a velocity of 25 m/s in 5 seconds. Calculate its acceleration.
7. A particle is moving in a straight line with a non-uniform velocity. Sketch a velocity-time graph for this motion.
8. Two objects A and B start moving from the same point at the same time. Object A moves with a constant velocity of 10 m/s, while object B accelerates uniformly at 2 m/s^2. After 5 seconds, what will be the relative velocity of B with respect to A?

9. A train is moving with a constant speed of 36 km/h. A person inside the train starts walking towards the front of the train at a speed of 2 km/h. What is the velocity of the person relative to the ground?
10. A particle moves along a straight line such that its displacement-time graph is a straight line inclined at an angle of 60° with the time axis. Calculate its average velocity during the time interval shown in the graph.

Learning Level 3

11. A car is moving along a straight road with a velocity of 20 m/s. After a time interval of 10 seconds, its velocity becomes 30 m/s. Calculate the average acceleration of the car during this time interval.
12. An object is dropped from a certain height and takes 2 seconds to reach the ground. Calculate its initial velocity and acceleration due to gravity.
13. Two trains A and B are traveling in the same direction on parallel tracks. Train A has a velocity of 60 km/h, while train B has a velocity of 75 km/h. If the length of train A is 150 meters and train B is 120 meters, how much time will train B take to cross train A completely?
14. A car accelerates uniformly from rest and reaches a velocity of 36 km/h in 6 seconds. Calculate the acceleration and displacement during this time interval.
15. A body is thrown vertically upwards with an initial velocity of 20 m/s. Calculate the time taken by the body to reach the maximum height and the maximum height attained.