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(RECALL ALL MEMORY)

11

2023
THEORY

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கல்விப் பொதுத் தராதரப் பத்திர(உயர் தர)ப் பரீட்சை, 2023 ஓகஸ்ட்
General Certificate of Education (Adv. Level) Examination, August 2023

භෞතික විද්‍යාව I
பௌதிகவியல் I
Physics I

Advanced Level Physics
Amith Pussella

Linear motion Question

The records of a handbook of an experienced driver regarding stopping of the vehicle which is in good condition along a dry road, are given in the following table.

Speed (ms^{-1})	distance travelled during the reaction time(m)	distance travelled during time of applying brakes(m)	Total distance travelled when stopping
5	3	1.9	4.9
10	6	7.5	13.5
15	9	17	26
20	12	30	42
25	15	47	62
30	18	68	86
35	21	92	113

- Explain the reason for the distance travelled during the reaction time to be proportional to the vehicle's speed and for the distance travelled during the time of applying brakes not to be proportional to the speed as such ?
- Find the maximum deceleration done by the vehicle ?
- What is the total distance travelled when the vehicle stopped while it was travelling at 50 ms^{-1} ?
- Explain how will be the distances travelled during braking and reaction times in the following instances.
 - When the road is wet
 - When the driver is not properly conscious due to consumption of alcohol.