**MIDWAY BOYS HIGH SCHOOL**

**TERM II OPENER EXAMS 2018**

**FORM THREE PHYSICS**

* *Answer* ***all*** *questions in the spaces provided.*
* *All formulae, working and SI units* ***must*** *be clearly shown.*

1. What is meant by uniform acceleration? (1mk)

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1. State the importance of the following:
2. Slope of a displacement – time graph. (1mk)

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1. Slope of a velocity – time graph. (1mk)

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1. Area under velocity – time graph. (1mk)

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1. A certain design of jaguar sports car is capable of accelerating from rest to a velocity of 30ms-1 in only 6s. Find the acceleration of the car, hence the distance travelled in the 6s. (4mks)

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1. During a fracas, a policeman shot a bullet vertically upwards with an initial velocity of 50ms-1 to scare away the crowd. Calculate:

a) The time taken by the bullet to reach maximum height. (2mks)

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b) The time of flight of the bullet. (2mks)

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c) The maximum height reached by the bullet. (2mks)

[Take g = 10ms-2]

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1. A missile is launched horizontally from a defense tower which is 80m high above a horizontal ground. If the missile hits an enemy on the ground 96m from the foot of the tower, calculate the initial horizontal velocity of the missile.[Take g = 10ms-2]. (3mks)

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1. a) Define inertia. (1mk)

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b) State the law of inertia. (1mk)

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7) Define the following terms:

a) Dispersion of white light. (1mk)

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b) Critical angle of incidence. (1mk)

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c) Cladding. (1mk)

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8) Calculate the critical angle for a material whose refractive index is 1.4. (3mks)

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9) State ***two*** conditions necessary for total internal reflection to occur. (2mks)

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10) State ***one*** application of total internal reflection of light in medicine. (1mk)

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11) Identify the ***two*** processes light needs to undergo for a rainbow to be formed.(2mks)

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