



وزارة التربية والتعليم و التعليم الفني
الإدارة المركزية للتعليم العام
إدارة تنمية مادة الرياضيات

برعاية معالي وزير التربية والتعليم و التعليم الفني السيد الأسناذ / محمد عبد اللطيف

ونوجيهات رئيس الإدارة المركزية للتعليم العام
المشرف على مسنشارى المواد الدراسية

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إشراف علمي
مسنشار الرياضيات

أ/ منال عزقول

إدعاءات ونقييمات لمنهج تطبيقات الرياضيات لفان

للصف الثانى الثانوي " علمى "
الفصل الدراسى الثانى
للعام الدراسى 2025 / 2026

الأسبوع الحادي عشر

إعداد

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(11) الأداء الصفّي - الصف الثانی الثانوی - علمی - تطبيقات الرياضيات لغات - الأسبوع الحادي عشر (11)

- (1) A body with a mass of 200 kg fell from a height of 90 cm onto a pile of sand and sank into it. If the sand's resistance is 2200 kg.wt, calculate the distance the body would sink into the sand before it came to rest.
- (2) A body with a mass of 2 kg fell from a height of 10 meters onto sandy ground and sank into it a distance of 5 cm. Calculate: In kg.wt, the sand's resistance to the body, assuming it is constant.
- (3) A body with a mass of m kg fell from a height of 1 meter onto a pile of sand and sank into it a distance of 10 cm. If the sand's resistance to the body is 55 kg.wt, calculate the value of m .
- (4) The last car of a 49 ton train was separated when its speed was 54 km/h. It moved at a constant retardation and stopped after 125 m. Find: The magnitude of the resistance in kg.wt that affected the separated car.
- (5) A box with a mass of 50 kg is lifted vertically upwards by a rope with a uniform acceleration of 29.4 cm/sec^2 . Find the magnitude of tension in the rope, neglecting the resistance.
- (6) A man pushes a stationary car with a mass of 294 kg with a constant force. Its speed reaches 30 cm/sec after 3 seconds. Find: With a kilogram weight , the force with which the man pushed the car if the resistance is 40 kg.wt .
- (7) Find the magnitude of horizontal force with which the locomotive of a train with a mass of 245 tons pulls it to increase its speed from rest to 18 km/h after it has traveled a distance of one km on a horizontal road, knowing that the magnitude of resistance is 4 kg.wt/ton.

- (8) A train with a mass of 196 tons (including the locomotive) moves with a uniform acceleration of 10 cm/sec^2 on a straight horizontal road. If the air resistance and friction 15 kg.wt per ton of the train's mass, then find, in kilogram weight, the force of the train's machinery.
- (9) A balloon with a mass of 105 kg is moving vertically downwards with a constant acceleration of 98 cm/sec^2 . Find, in kilogram weight, the magnitude of air lifting force acting on the balloon, neglecting air resistance.
- (10) A balloon with a mass of 210 kg is moving vertically upwards with a constant velocity. A body with a mass of 70 kg falls from it, neglecting air resistance. Find, in kilogram weight, the acceleration with which the balloon then ascends after that.

(11) الأداء المنزلي - الصف الثاني الثانوى - علمى - تطبيقات الرياضيات لغات - الأسبوع الحادي عشر (11)

- (1) A body with a mass of 100 kg fell from a height of 40 cm onto a pile of sand and sank into it. If the resistance of the sand is 1100 kg.wt, calculate the distance the body would sink into the sand before it came to rest.
- (2) A body with a mass of 5 kg fell from a height of 4 m onto sandy ground and sank into it a distance of 7 cm. Calculate: in Newtons the resistance of the sand to the body, assuming it is constant.
- (3) A body with a mass of m kg fell from a height of 10 m onto a pile of sand and sank into it a distance of 5 cm. If the resistance of the sand to the body is 50 kg.wt, calculate the value of: m
- (4) The last car of a 19.6 ton railway train was seperated when its speed was 18 km/h. It moved at a constant rate and stopped after 120 m.
Find: The magnitude of resistance that affected the seperated car with a kilogram weight.
- (5) A box with a mass of 100 kg is lifted vertically upwards by a rope with a constant acceleration of 49 cm/sec^2 . Find the magnitude of tension in the rope, neglecting the resistance.
- (6) A man pushes a stationary car with a mass of 980 kg with a constant force. Its speed reaches 45 cm/sec after 5 seconds. Find: kg.wt, the force with which the man pushed the car if the resistance is 50 kg/wt.
- (7) Find the magnitude of horizontal force that the locomotive of a train with a mass of 490 tons would use to increase its speed from rest to 36 km/h after covering a distance of 500 meters on a horizontal road, knowing that the magnitude of resistance is 5 kg.wt .
- (8) A train with a mass of 245 tons (including the locomotive) is moving with a constant acceleration of 15 cm/sec^2 on a straight horizontal road. If the resistance of air and friction 75 kg.wt per ton of the train's mass, so find the weight of the train's machinery in kilogram weight.

(9) A balloon with a mass of 120 kg is moving vertically downwards with a constant acceleration of 24.5 cm/sec^2 . Find: the magnitude of air lifting force acting on the balloon with a kilogram weight, neglecting air resistance.

(10) A balloon with a mass of 105 kg is moving vertically upwards with a constant speed. A body with a mass of 35 kg falls from it, neglecting air resistance. Find: the acceleration with which the balloon ascends after that.



(11) التقييمات الأسبوعية - الصف الثانى الثانوى - علمى - تطبيقات الرياضيات لغات - الأسبوع الحادي عشر (11)

The first group:

(1) A 3 kg body falls from a height of 250 cm onto sandy ground and sinks 7 cm. Calculate: in kg.wt the resistance of the sand to the body, assuming it is constant.

(2) A 10 kg box is raised vertically upwards by a rope with a uniform acceleration of 20 cm/sec^2 . Find the magnitude of the tension force in the rope, neglecting the resistance.

(3) A man pushes a stationary car of 300 kg with a constant force. After 4 seconds, its speed becomes 40 cm/sec . Find in kilograms, the force with which the man pushes the car if the resistance is 60 kg.wt.

(4) Find the magnitude of the horizontal force exerted by a locomotive on a train of 200 tons to increase its speed from rest to 5 m/sec after it has traveled a distance of 500 meters on a horizontal track, given that the magnitude of the resistance force is 49 Newton/ton.

(5) A train with a mass of 300 tons (including the locomotive) moves with a uniform acceleration of 20 cm/sec^2 on a straight horizontal track. If the air resistance and friction are 25 kg.wt per ton of the train's mass, find, in kg.wt, the force exerted by the train's machinery.

The second group:

(1) A 5 kg body falls from a height of 160 cm onto sandy ground and sinks 8 cm. Calculate, in kilograms, the resistance of the sand to the body, assuming it is constant.

(2) A 12 kg box is raised vertically by a rope with a uniform acceleration of 120 cm/sec^2 . Find the magnitude of the tension force in the rope, neglecting the resistance.

(3) A man pushes a stationary car with a mass of 350 kg with a constant force. After 5 seconds, its speed becomes 50 cm/sec . Find, in kilograms, the force with which the man pushes the car, if the resistance is 80 kg.wt.

(4) Find the magnitude of the horizontal force exerted by a locomotive on a train of mass 120 tons to increase its speed from rest to 5 m/sec after it has traveled a distance of 600 meters on a horizontal track, given that the magnitude of the resistive force is 29.4 Newton/ton.

(5) A train of mass 240 tons (including the locomotive) moves with a uniform acceleration of 30 cm/sec^2 on a straight horizontal track. If the air resistance and friction are 35 kg.wt per each ton of the train's mass, find, in kg.wt the force exerted by the train's machinery.

The third Group:

(1) A body of mass 20 kg falls from a height of 10 meters onto a sandy surface and sinks 14 cm into it. Calculate, in kilograms, the resistance of the sand to the body, assuming it remains constant.

(2) A box of mass 8 kg is raised vertically upwards by a rope with a uniform acceleration of 2.2 m/sec^2 . Find the magnitude of the tension force in the rope, neglecting the resistance.

(3) A man pushes a stationary car of mass 300 kg with a constant force. After 7 seconds, its speed becomes 70 cm/sec. Find, in kilograms, the force with which the man pushes the car if the resistance is 60 kg.wt.

(4) Find the magnitude of the horizontal force exerted by a locomotive on a train of mass 100 tons to increase its speed from rest to 10 m/sec after it has traveled a distance of 400 meters on a horizontal track, given that the magnitude of the resistance force is 39.2 Newton/ton.

(5) A train of mass 140 tons (including the locomotive) moves with a uniform acceleration of 60 cm/sec^2 on a straight horizontal track. If the air resistance and friction are 40 kg.wt per each ton of the train's mass, find, in kg.wt the force exerted by the train's machinery.