المملكة العربيّة السّعوديّة

وزارة التّعليم

MINISTRY OF EDUCATION
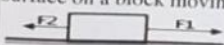
وفوق كل ذي علم عليم

هام

لكل المهتمين و المهتمات
بدروس و مراجع الجامعية

eduschool40.blog مدونة المناهج السعودية

ID	Question	A	B	C	D
1	The acceleration of a body under the influence of two or more forces is always in the direction of _____	The positive force	The larger force	The smaller force	Resultant force
2	A ball leaves the ground level with take-off angle 30o to the horizontal and reaches a maximum height of five meters. The take-off speed of the ball is :	19.8 m/s	16.7 m/s	25.8 m/s	10 m/s
3	An object is subjected to a displacement of $\Delta \vec{r} = 2i + 4j - 5k$ and ending with position vector $\vec{r} = 4i + 8j-10k$ in meters. The magnitude of its initial position vector is:	5.8 m	zero	6.7 m	10 m
4	The friction force on a moving body is proportional to the _____ .	acceleration of the body	weight of the body	force causing the motion	normal force on the body
5	A player of a mass 57 Kg runs on a circular track of radius 24 m with constant speed of 15 m/s. The magnitude of his centripetal force is:	537.38 N	525.38 N	540.38 N	534.38 N
6	A ball is thrown with a force of 62 N. The ball has an acceleration of 4 m/s². What is the mass of the ball?	14.5 Kg	18.5 Kg	15.5 Kg	17.5 Kg
7	A block of 5 kg is at rest on a frictionless inclined surface of 30° to the horizontal, which connected to the wall trough a cord. The value of the tension force of the cord is:	26.7 N	30.7 N	24.5 N	10.8 N
8	The newton	is a unit of velocity	$= kg.m.s^{-2}$	$= kg.m/s$	$= kg.m.s^2$
9	In the figure, two blocks are connected together with a cord over a frictionless inclined surface, where $m_1 = 12\ kg$ and $m_2 = 20\ kg$, the acceleration of the two blocks is:	0.99 m/s²	0.23m/s²	0.39 m/s²	0.79 m/s²
10	An elevator weights 29 kN moves upward with its speed increasing at a rate of 1.5 m/s². The tension in the cable of the elevator is:	39.8 kN	33.4 kN	14.5 kN	46.7 kN
11	The maximum range of a projected ball is 60 m, the initial speed of the ball was:	24.249 m/s	22.249 m/s	25.249 m/s	27.249 m/s

1

ID	Question	A	B	C	D
22	The period time of an object moving at a constant speed of 5 m/s on a circular path of radius 5 m is:	$\pi/2$ (Second)	π (Second)	2π (Second)	Zero
23	The formula of the centripetal force _____	m^2vR	mv^2R^{-1}	mv^2R	v^2R^{-1}
24	In the figure if $F_1 = 17$ N and $F_2 = 11$ N, the frictional force exerted by the surface on a block moving with constant velocity is : F2 [ ] F1	6 N	27 N	28 N	7 N
25	A car rounds a 5 m radius curve at speed of 5 m/s. The magnitude of its centripetal acceleration is:	5 m/s^2	Zero	1 m/s^2	25 m/s^2
26	An object accelerates over smooth inclined plane with 2 m/s^2. The angle of that plane with the horizontal level is:	11.78°	12.31°	15.12°	0°
27	A bullet is fired from ground level with a speed of 140 m/s at angle 30° above the horizontal. What is the vertical component of its velocity when it is at the highest point of its trajectory?	140 m/s	70 m/s	121.24 m/s	Zero
28	The force required to keep an object in a circular orbit is directed _____	away from the center of the circle	in the direction opposite to that in which the object is moving	toward the center of the circle	in the direction in which the object is moving
29	A 22 kg object is moving with a net force of 8 N directed to south. The object having a magnitude of acceleration _____	2.75 m/s^2 south	0.36 m/s^2 north	2.75 m/s^2 north	0.36 m/s^2 south
30	The force of friction on a sliding object is $f_k = 6$ N. The magnitude of the applied force needed to maintain a constant velocity is _____	More than 6 N	3	6 N	Less than 6 N

	Question	A	B	C	D
12	A projectile is fired over the ground level with an initial velocity that has a vertical component of 20 m/s and a horizontal component of 25 m/s. The distance from launching to landing points is:	130 m	102 m	90 m	120 m
13	A 0.85 kg ball attached to a string is rotating in a vertical circle of radius 1 m. Find the magnitude of the tension in the string at the bottom of the circle where its speed is 7 m/s.	48.98 N	51.98 N	49.98 N	52.98 N
14	A soccer ball is kicked from the ground with an initial speed of 6 m/s. The maximum horizontal distance the ball travels:	6.673 m	5.673 m	7.673 m	3.673 m
15	A block is located on a frictionless horizontal table, at the earth. This block accelerates at 1.75 m/s² when a 83 N horizontal force is applied to it. The block and the table are then set up on the moon where the acceleration due to gravity is 1.62 m/s². What is the weight of the block on the moon?	72.48 N	76.83 N	78.78 N	79.93 N
16	The speed of a 5.0 N hockey puck, sliding across a level ice surface, decreases at the rate of 0.61 m/s².The coefficient of kinetic friction between the puck and ice is:	0.048	0.062	0.091	0.112
17	The x-y coordinates of a particle as a function of time are x = 2t²+t and y= t²+2 t +1. The position vector describing its location after one second is:	3 i + 4 j	6 i - 4 j	7 i + 4 j	4 i + 3 j
18	A 27.5 kg piece of wood is placed on top of another piece of wood. There is 52.5 N of maximum static friction force measured between them. Determine the coefficient of static friction between the two pieces of wood.	0.22	0.1	0.195	0.25
19	A ball has a weight of 52 N is thrown at an angle of 30° above the horizontal with an initial speed of 5 m/s. Neglecting air resistance, at its highest point, the magnitude of the net force on the ball is _____	104 N	26 N	52 N	Zero
20	A 2kg box is at rest on a rough inclined surface with 25° to the horizontal. If it is on threshold of motion, the coefficient of static friction between the box and the surface is:	0.25	0.54	0.47	0.36
21	An object of mass 3 kg is subjected to two forces to give it an acceleration of $\vec{a}$ = 4i + 3j (m/s²). If the first force is $\vec{F}$ = 8i + 7j (N) then the second one is:	5i - 4 j	4 i + 2 j	3 i + 8 j	9 i + 3 j

Handwritten notes (left and within rows):

Row 13: $E = T - mg \rightarrow T = \frac{E}{\dots} + mg = 49.98$

Left margin: $m = \frac{F}{a} = \frac{83}{1.75}\,m_B$
$W = mg = \dots$
$= (47.4)(1.62)$