

1- Two stones are projected from the same point with same speed making angles $45^{\circ} + \theta$ and $45^{\circ} - \theta$ with the horizontal, respectively. If $\theta < 45^{\circ}$, then the horizontal ranges of the two stones are in the ratio of ?



Answer is: A

2- Three balls of same masses are projected with equal speeds at angles 15° , 45° , 75° and their ranges are respectively R1, R2 and R3, then ?

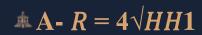
A-
$$R1 > R2 > R3$$

B-
$$R1 < R2 < R3$$

$$C-R1 = R2 = R3$$

D-
$$R1 = R3 < R2$$

3- Two stones are projected with same velocity v at an angle θ and 90° - θ . If H and H1 are greatest heights in the two paths, what is the relation between R, H and H1?



$$B- R = \sqrt{HH1}$$

$$^{\perp}$$
 C- $R = 4HH1$

D- None of these

Answer is: A

- 4- A baseball is thrown horizontally from a cliff. At the same instant, a bowling ball is dropped from the same height. Assuming air resistance can be ignored, which of the following statements is correct?
- A- The bowling ball hits the ground first
- B- Both the bowling ball and the baseball hit the ground at the same time.
- C- The baseball has the greater acceleration just before it hit the ground
- D- The bowling ball has the greater velocity just before it hit the ground

Answer is :B



5- The velocity of projection of a projectile is given by $\vec{u} = 5 + 10$ Find the approximated time of flight?



A- 2

B-3

C-5

D-10

Answer is :A

6- A particle is projected horizontally the angle of projection to maximum range is

A- 90

B-60

C- 45

D-30

7- Two forces of magnitude 6 and F N, act on a particle, if the resultant bisect the angle between there, then F=.....Newton

A- 12

B-6

C-8

D-10

Answer is :B

8-tf the initia speed of a projectile is doubled

A- its range will double

B- Its range will be decreased by a factor of two

C- lts range will quadruple

D- its range will decrease by factor of four

9- You stand on a cliff 30 m high You throw a rock off the cliff. The rock is thrown straight up at 10m/s calculate the time of flight as the rock strikes the ground at the bottom of cliff



A- 3.7

B-2.3

C-1.6

D- 2.5

Answer is: A

10-the components of a force 150 Newton into two direction inclined at angle of 45 and 30 with the force are

A- 77.63 N ,105.78 N

B -78.63 N ,109.78 N

C- 79.63 N ,110.78

D- 77.63 N , 109.78 N

11- A particle is projected horizontally. The angle of projection to get the maximum range is

A-90

B-60

C-45

D- 30

Answer is : C



A- 26.57, 63.44

B-53.13, 126.87

C- 26.57, 126.87

D- 53.13, 63.44



13- A bullet with fired at velocity 100 m/s and angle 45 with horizontal how high the bullet will rise

?

A- 353.55m

B- 500m

C- 250m

D-707.1m

Answer is: C



A- F1>F2

B- F1<F2

C- F1=F2

D- F1=2F2

15- The magnitude of the resultant of two equal forces is equal to the magnitude of either forces. What is the angle between the two forces?



A-60

B-90

C- 120

D- 150

Answer is : C

16- Two forces of magnitude 5N and 10N act on a wooden block. If 5N force acts towards right and 10N force acts towards left, which of the following statements is correct?

A- Resultant force is 15N towards left.

B- Resultant force is 15N towards right.

C- Resultant force is 5N towards left.

D- Resultant force is 5N towards right.

- 17- If the sum of all the forces acting on a body is zero, it may be concluded that the body......
- A- Must be in equilibrium.
- **B-** Cannot be in equilibrium.
- C- May be in equilibrium provided the forces are concurrent.
- D- May be in equilibrium provided the forces are parallel.

Answer is: A

18- Two perpendicular forces of magnitude 6 and 8 N, act on a particle, then the magnitude of their resultant=...... Newton

A- 20

B-14

C-10

D-8

19- The sum of magnitudes of two forces acting at a point is 16N. if the resultant force is 8N and its direction is perpendicular to the smaller

force, then the forces are

A-6N and 10N

B-8n and 8N

C-4N and 12N

D-2N and 14N

Answer is: A

20-Two forces of magnitude F1, F2 act at a particle, the magnitude of their resultant is R newton where $8 \le R \le 12$, then: F1=.... Newton, F2=.... Newton. Given that F1< F2.

A- 2,10

B- 8,12

C- 6,8

D- 8,10

21- .The sum of the magnitudes of two forces acting at a point is 16 N, the resultant of these forces has a magnitude of 8 N and is perpendicular to the smaller force. Find the magnitude of the smaller force.



A- 4N

B- 5N

C- 6N

D-7N

Answer is : A

22- force of magnitude 6 Newton acts in direction of North. It is resolved into two perpendicular components, so its component indirection of the East equals Newton.

A- 6

B- $6\sqrt{2}$

C-0

D- -6

23- The minimum number of vectors of unequal magnitudes which can give zero resultant are.....

A-Two

B- Three

C- Four

D- More than four

Answer is: B

24- Two forces of magnitudes 25 and 85 newton acting on a body form an angle of 55°, then the magnitude of their resultant =..... Newton approximated to the nearest hundredth, and measure of the angle formed between the resultant and larger force=........ To the nearest degree.

110.43, 13°

101.43, 12°

101.15, 28°

110.24, 11°

25- Two forces of magnitudes 25 and 85 newton acting on a body form an angle of 55°, then the magnitude of their resultant =..... Newton approximated to the nearest hundredth, and measure of the angle formed between the resultant and larger force=........ To the nearest degree.

B- 101.43, 12°

C- 101.15, 28°

D- 110.24, 11°

Answer is: B

26-A helicopte of mass 3 ton ,moving vertically upwards with uniform acceleration 4 9/30 m /sec^2 if the resistance of air 0 . 5 ton .wt pear each ton of its mass ,the force helicopter

A- 14700 N

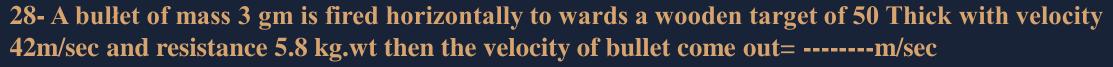
B- 4900 Kg.wt

C- 5000 to N.wt

D- 5 ton.wt

- 27- If the sum of all the forces acting on a body is zero, it may be concluded that the body
- A- Must be in equilibrium
- **B-** Cannot be in equilibrium
- C- May be in equilibrium provided the forces are concurrent
- D- May be in equilibrium provided the forces are parallel

Answer is: A



A- 57.72

B- 14

C- 40.04

D-28

