



PHYSICS

BOOKS - TARGET PUBLICATION

MOTION , FORCE AND WORK

Solved

1. Fill in the blanks with the proper words from the brackets :

..... Is a scalar quantity (speed,velocity).



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2. Fill in the blanks with the proper words from the brackets:

If a body traverses a distance in direct proportion to the time, the speed of the body is _____ .



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3. Fill in the blanks with the proper words from the bracketes:

_____ is the distance traversed by a body in a particular direction in unit time.



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4. Fill in the blanks with the proper words from the brackets:

If a body is moving with a constant velocity is acceleration is _____.





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5. Odd one out :

m/s , dyne , km/hr, cm/s .



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6. Find the odd one out:

Acceleration, force, velocity, speed



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7. Match the following :

From the groups B and C , choose the proper words , for each of the words in group A .:

	Group 'A'		Group 'B'		Group 'C'
i.	Work	a.	newton	x.	erg
ii.	Force	b.	metre	y.	cm
iii.	Displacement	c.	joule	z.	dyne



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8. How are we different :

Speed and velocity .



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9. What is meant by speed?



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10. What is the formula for calculating speed?



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11. Answer in one sentence :

What is the cause of acceleration ?



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12. Answer in one sentence :

Acceleration is a vector quantity . Is force a vector quantity , too ?



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13. Answer in one sentence :

What does Newton's first law of motion state ?



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14. Answer in your own words :

Explain the following concepts in your own words with everyday examples :

Force



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15. Answer in your own words :

Explain the following concepts in your own words with everyday examples :

work



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16. Answer in your own words :

Explain the following concepts in your own words with everyday examples :

displacement



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17. Answer in your own words :

Explain the following concepts in your own words with everyday examples :

velocity



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18. Answer in your own words :

Explain the following concepts in your own words with everyday examples :

acceleration



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19. Answer in your own words :

Explain the following concepts in your own

words with everyday examples :

distance



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20. A Bird sitting on a wire, flies, circles around and comes back to its perch. Explain the total distance it traversed during its flight and its eventual displacement.



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21. Answer the following :

Let's find the unit .:

Task	Speed	Velocity
Write the formula	Speed =	Velocity =
Write the units of the quantities	Distance: Time period:	Displacement: Time period:
Insert the units instead of quantities in the formulae. You will get the unit of speed and velocity.		



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22. Answer the following :

The unit of acceleration is m/s^2 . Verify this .



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23. Answer the following :

When a toy car that runs on a clockwork spring is released on a flat floor , after winding up the spring , it goes in a straight line .
However, when it is hit on one side , it changes direction and keeps going . If it collides into a wall , it stops . it means that its velocity changes . how did this change take place .

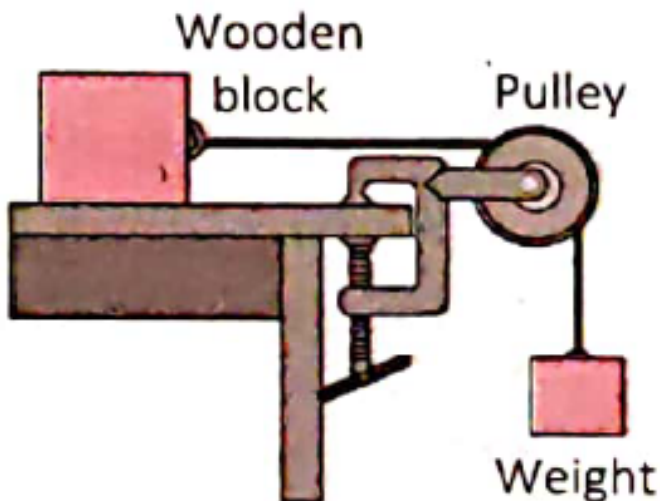


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24. Answer the following :

In the figure alongside , a string , attached to a wooden block on a table , is passed over a pulley and tied to a weight . On applying a sufficient weight, the block will be seen to move :

Which force is being applied here ?:



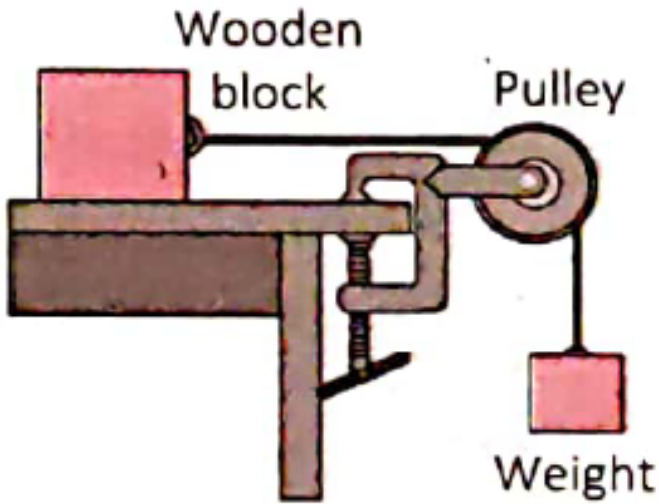


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25. Answer the following :

In the figure alongside , a string , attached to a wooden block on a table , is passed over a pulley and tied to a weight . On applying a sufficient weight, the block will be seen to move :

How can this force be increased ?:



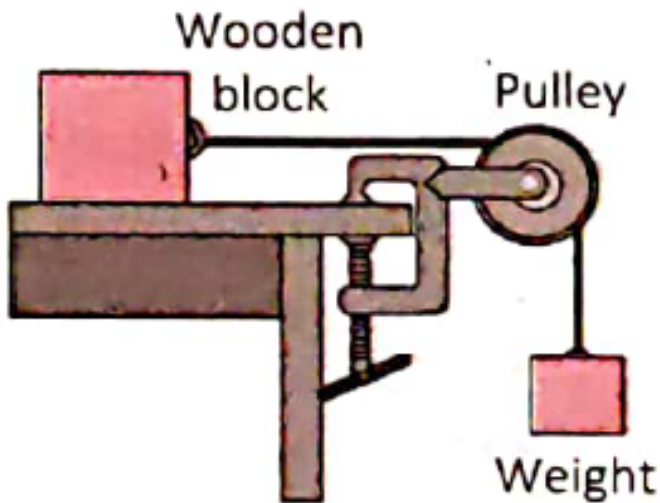
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26. Answer the following :

In the figure alongside , a string , attached to a wooden block on a table , is passed over a

pully and tied to a weight . On applying a sufficient weight, the block will be seen to move :

What will happen on applying more force ?:



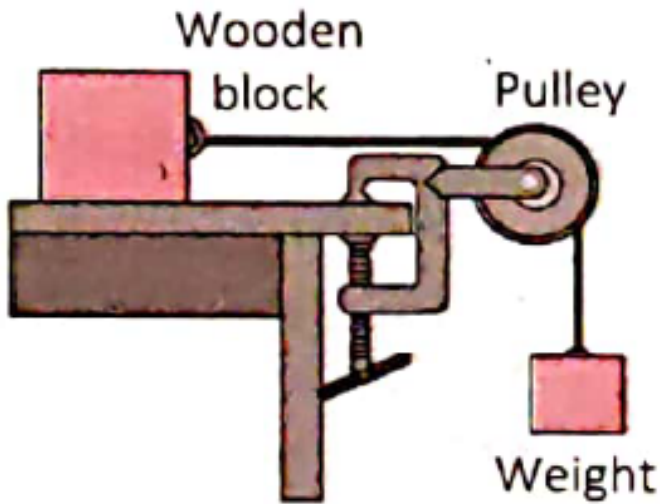
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27. Answer the following :

In the figure alongside , a string , attached to a wooden block on a table , is passed over a pulley and tied to a weight . On applying a sufficient weight, the block will be seen to move :

When can we say that work is done by the

applied force ?:



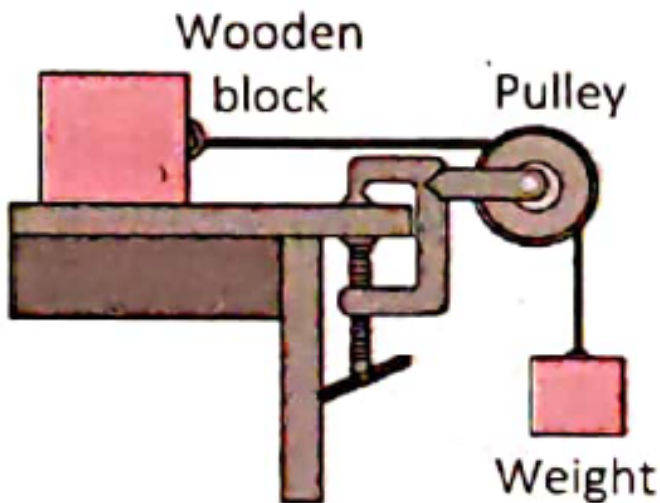
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28. Answer the following :

In the figure alongside , a string , attached to a wooden block on a table , is passed over a

pully and tied to a weight . On applying a sufficient weight, the block will be seen to move :

If the block moves forward we can say that it has been displaced . due to the displacement , we sat that the force has done some work . can we measure this work ?:



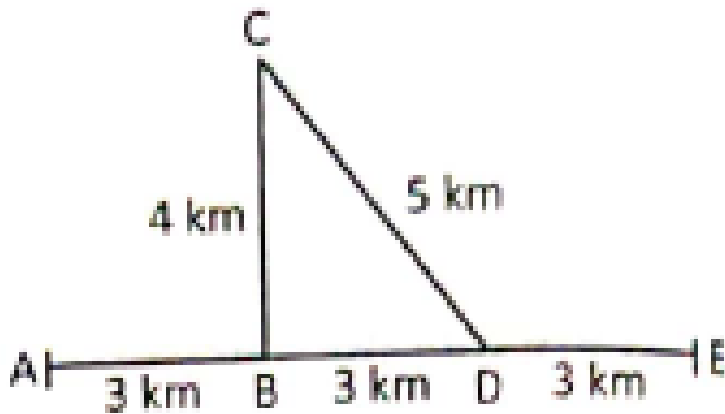
29. Solve the following questions :

Observe the figure and answer the questions :

sachin and sameer started on a motorbike from place A, took the turn at B , did a task at C , travelled by the route CD to D and the went on to E . Altogether , they took one hour for this journey :

find out

the actual distance traversed by them:



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30. Solve the following questions :

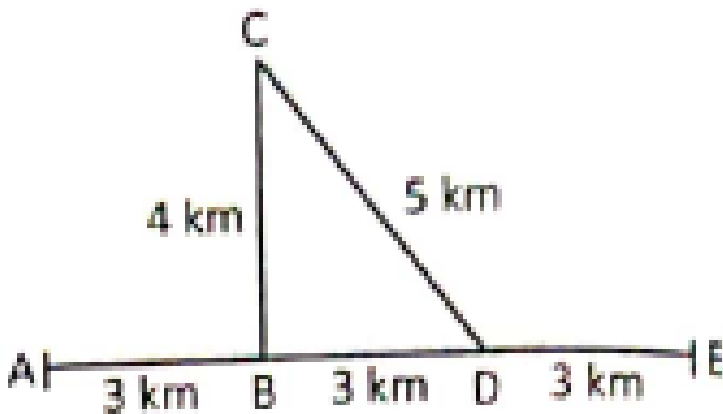
Observe the figure and answer the questions :

sachin and sameer started on a motorbike

from place A, took the turn at B , did a task at C , travelled by the route CD to D and the went on to E . Altogether , they took one hour for this journey :

find out

the displacement from A to E .:



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31. Solve the following questions :

Observe the figure and answer the questions :

sachin and sameer started on a motorbike

from place A, took the turn at B , did a task at

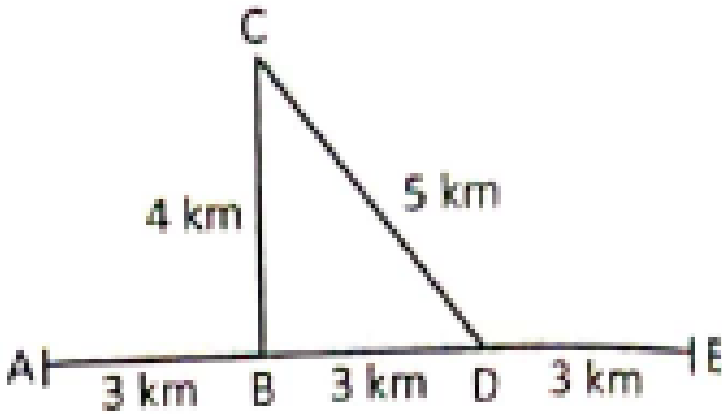
C , travelled by the route CD to D and the went

on to E . Altogether , they took one hour for

this journey :

find out

From this , deduce their speed .:



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32. Solve the following questions :

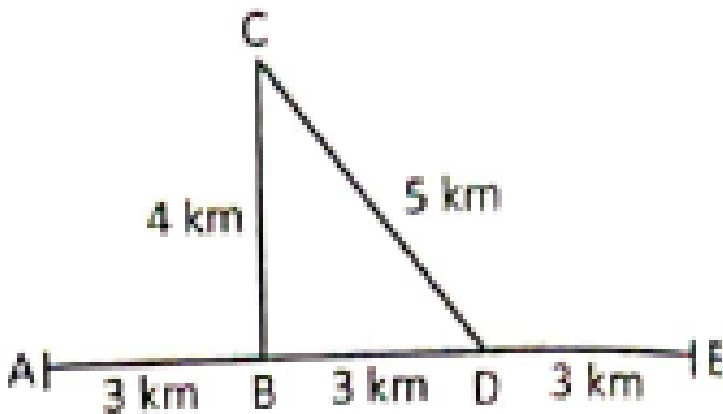
Observe the figure and answer the questions :

sachin and sameer started on a motorbike

from place A, took the turn at B , did a task at C , travelled by the route CD to D and then went on to E . Altogether , they took one hour for this journey :

find out

What was their velocity from A to E in the direction AF ?:



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33. Solve the following questions :

If the truck traverses the 10km distance AB in 10 minutes, BC in 20 minutes and CD in 30 minutes , then

velocity for the distance AB in km/hr = $(10 \text{ km} / 10 \text{ minutes}) = (60 \text{ km} / 60 \text{ minutes}) = 60 \text{ km/hr}$:

Now deduce the velocities for the distances BC and CD .



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34. Solve the following questions :

A bus covers the distance of 100 km between its starting point at depot and the first bus stop in 2 hours , the distance of 80km between two bus stops in one and half hours and the distance of 120 km between second bus stop and its destination point in two and half hours , what is the average velocity of the bus if it has moved in straight line throughout the journey ?



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35. A ball is rolling from A to D on a flat and smooth surface. Its speed is 2 cm/s. On reaching B, it was pushed continuously up to C. On reaching D from C, its speed had become 4cm/s`. It took 2 seconds for it to go from B to C. What is the acceleration of the ball as it goes from B to C ?



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36. Solve the following questions :

When certain weight is tied through pulley ,

the block gets displaced through displacement of 50cm .the work done on the block is 2500 erg then , how much force is applied on the block by weight ?



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37. Solve the following questions :

A force of 1000 N was applied to stop a car that was moving with a constant velocity . The car stopped after moving through 10m . How much is the work done ?



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38. Solve the following questions :

A cart with mass 20 kg went 50m in a straight line on a plain and smooth road when a force of 2 N was applied to it . How much work was done by the force ?



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39. What is meant by motion ? What causes a change in motion ?



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40. Oral work :

Why is displacement a vector quantity ?



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41. Oral work :

What is an instantaneous velocity ?



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42. Oral work :

How much force will be applied on mass of 1 kilogram on a surface with no friction if it is pulled with acceleration of 1 m/s^2 ?



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43. Oral work :

When is the work done said to be 1 joule ?

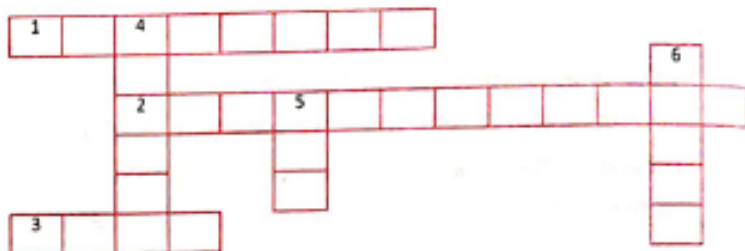


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44. Solve the following crossword :

Across :

Total path length of route travelled .:

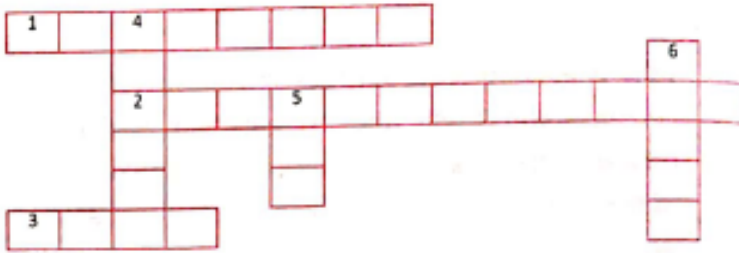


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45. Solve the following crossword :

Across :

Increase in velocity causes

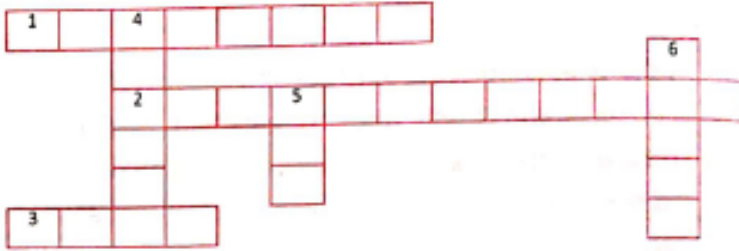


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46. Solve the following crossword :

Across :

..... = force x displacement ..:

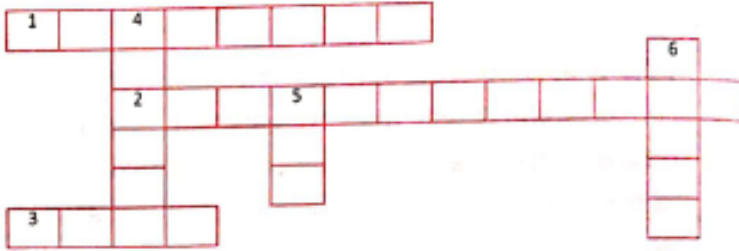


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47. Solve the following crossword :

Down :

Speed is Quantity ..:

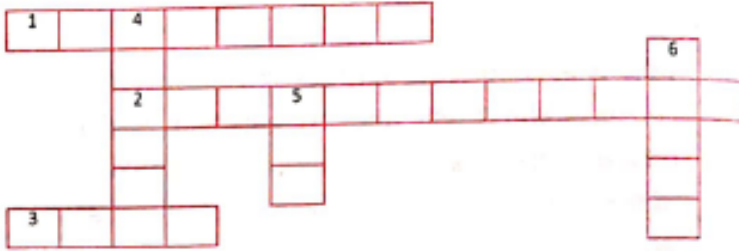


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48. Solve the following crossword :

Down :

CGS unit of work ..:



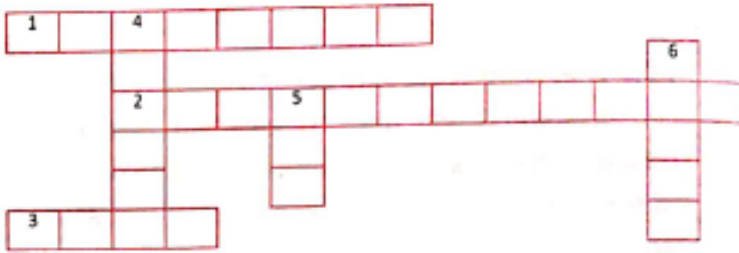
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49. Solve the following crossword :

Down :

..... is measured by acceleration produced

due to it ...:



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50. Choose the correct alternative :

The Can be different at different times .

A. average velocity

B. average speed

C. instantaneous velocity

D. uniform velocity

Answer: A::C



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51. Choose the correct alternative :

The ability to do work is

A. energy

B. acceleration

C. heat

D. force

Answer:



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52. Choose the correct alternative :

Force is measured by the That it produces .

A. energy

B. acceleration

C. work

D. displacement

Answer: A::C



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53. Choose the correct alternative :

Acceleration is produced

A. when an object moves in straight line

B. when an object is at rest

C. when an object moves with constant
speed

D. when a moving object changes its
direction

Answer: A::B::C::D



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54. State right or wrong . If wrong , write the correct sentence :

Unit of acceleration is m/s^2 .



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55. State right or wrong . If wrong , write the correct sentence :

Work done by a force can never be zero .



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56. Answer the following :

Reema cycled once around the circular garden and came back to entrance from where she had entered the garden . What is the distance covered by her and her displacement ?



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57. Answer the following :

What are the conditions in which acceleration is produced ?



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58. A boy displaces a box by applying force of 5 N on it . If work done by boy is 20 j then , what will be the displacement of box ?



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