



## **PHYSICS**

## **BOOKS - JBD PUBLICATION**

## Model Test Paper 12



1. Which one is not the unit of distance?

A. Kilometer

B. angstrom

C. Light year

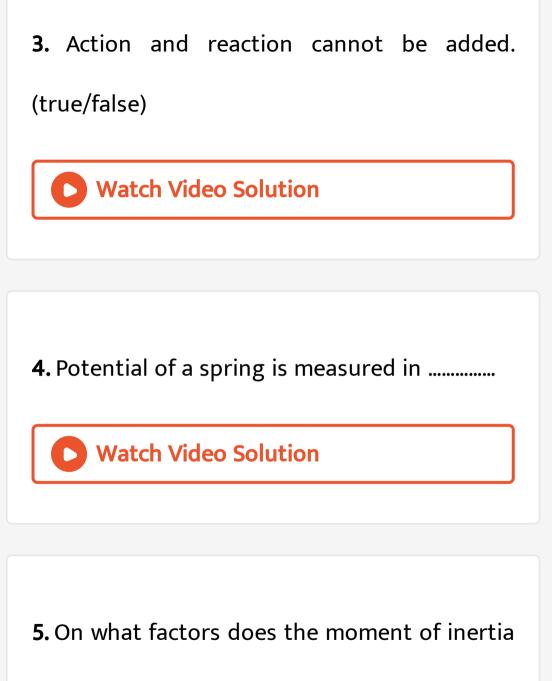
D. Slug

#### Answer:

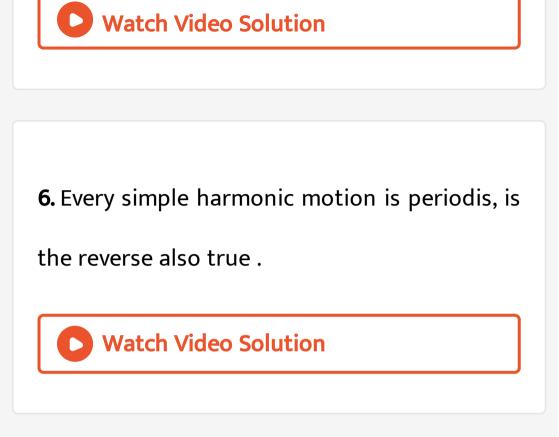
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### 2. A vector multiplied by a sclar will give a

scalar. (yes / no)



depend?



7. Write four characteristics of any natural

force.

8. What are the limitations of dimensional

analysis?



**9.** A car covered 10 m in 5th second 16 m in 8th second. Find the distance travelled by it in 10th second.



**10.** A body of mass 10 kg is acted upon by two perpendicular forces 6N and 8N. Find the magnitude of acceleration produced in the body.

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**11.** A body is projected horizontally on a rough surface and it comes to rest after travelling a distance S. Find the value of co-efficient of friction.





12. Find moment in inertia of a uniform ring

about a tangent perpendicular to the ring.



**13.** Two masses 20 kg and 50 kg attract each other with a force 5 gf. Fid the distance between the two masses.

14. Why is it painful to walk bare footed on a

road covered with edged pebbles?

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15. Derive the relation between linear velocity

and angular velocity.



**16.** A boy wants to throw a ball to his friend across the street 40 m wide. The bou's window is 10 m below the friends window. Find with what velovcity he should throw the ball.

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**17.** How can force of friction be reduced ?

**18.** A body of mass 5 kg placed on the surface of rough inclined plane rising 7 in 25 just slides down. Calculate the value of limiting friction ci-efficient of friction.

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**19.** State and prove work energy theorem.

**20.** State Keplers' laws of planetary motion.



21. What is Stokes' law? Derive the relation by

method of dimensions.

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**22.** What is an oscillartory motion?

23. What are statiionary waves?State their

characteristics.



**24.** Define an echo?



**25.** Find the relations for the first harmonic produced by an open end organ pipe and a closed end organ pipe.



# **26.** Define terminal velocity and find an expression for it.



27. What is Poisson's ratio? Give its expression.

What are its units?

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28. State Newton's law of cooling.

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**29.** Define centre of mass of a rigid body.

**30.** Drive the equations of rotatory motion,  $\omega^2-\omega_0^2=2lpha heta$  and  $heta=\omega_0^t+rac{1}{2}lpha t^2$ , where

every letter has its usual meaning.

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31. State the principle of conservation of

angular momentum.

**32.** Define the theorem of parallel axes and apply it to find the moment of inertia of a uniform rod about an axis passing through one of its ends and perpendicular to its length.