SECOND TERMINAL EXAMINATION 2012

PHYSICS -Answer key

Standard: IX
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1.n/t

2.ring,pipe

3.ball rolling on a horizontal floor

4.(iv)

5.a=(v-u)/t
v=40m/s
u=0
t=5 seconds
a=(40-0)/5=8m/s^2

6. a) (i) - transverse wave (ii) – longitudinal wave
b) Transverse wave-The particles of the medium vibrate perpendicular to the direction of the propagation of the wave.
Longitudinal wave-The particles of the medium vibrate in a direction parallel to the direction of the propagation of the wave.

7. a) (A) and (C)
b) If an object is in a state of stable equilibrium,its centre of gravity will be low.

8. a) U=mgh
h=?
v^2 = u^2+2as
10*10=0+2*10*s
100=20s
s=5
m=2kg
g=10m/s^2
h=0m

U=2*10*0
=0J
b) U= mgh
=2*10*5
=100J

9. a) (i)
b) (iii) and (iv)
c) Work is said to be done in situations where the displacement of the object takes place in the direction of the applied force. It is not considered to be done in situations where there is no displacement.

10. a) Kannan did more work.
b) Power exerted by Rajeevan
P=W/t
= 600/10
= 60W
Power exerted by Kannan
P=W/t
=1000/20
=50W
Rajeevan exerted more power.

11. a) Total internal reflection.
b) The ray of light should pass from an optically denser medium to a rarer one.
The angle of incidence should be greater than the critical angle.

12. Real image:
Inverted
Can be caught on a screen
Height of the image can be measured directly
Virtual image:
Erect
Cannot be caught on screen
Height of the image cannot be measured directly

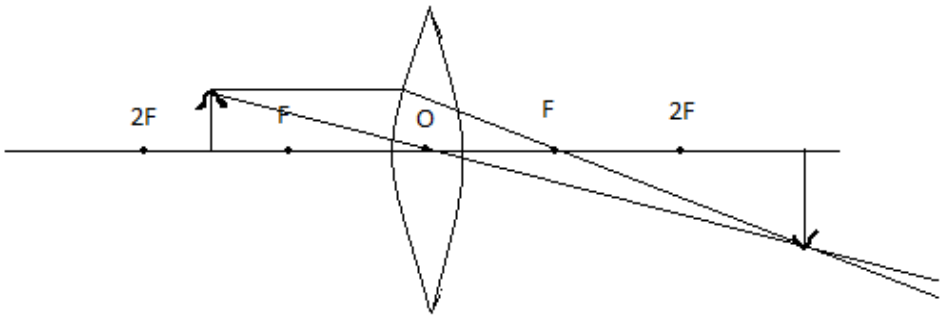
13.a) Weight
b) Weight of the object increases at the polar region than the equatorial region. The distance from the centre of the earth to the equator will be greater than the distance from the centre to the poles. As distance increases,gravitational force of attraction decreases. So the gravitational force of the earth increases at the poles.
c) Mass of an object does not change wherever it is taken.
Weight of the object at earth=mg
=m*10
Weight of the object at Jupiter=mg
=m*25.95

Thus,the weight of the object increases at Jupiter compared to the earth.

14. a) Mass of the objects.
b) The feather came down slowly because of the resistance offered by the air.
c) Gravitational constant,Mass of the object (both are constant) and the radius of the earth influence the acceleration due to gravity on earth's surface. The radius of the earth is not same everywhere.It is less to the poles and more to the equator. So the acceleration due to gravity will be more at the poles compared to that of equator.

15. a) Potential energy to Kinetic energy.
b) mass of the object and the velocity of the object.
c) i. Mass of the object.
ii. Velocity of the object.

16.A



a)
b) At 2F.
c) Between F and lens.

B. a) v = uf/(u+f)
= (40*30)/(40+30)
=1200/70
= 17.14cm.
b) The size of the image is greater than the object. The image is formed beyond 2F and is real and inverted.