

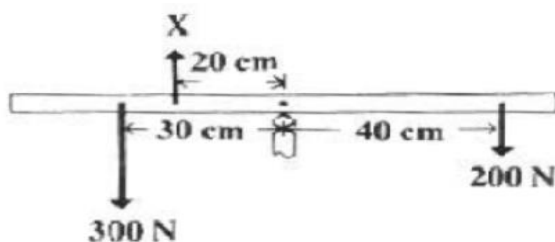
CHERCHER SECONDARY SCHOOL**GRADE 12th PHYSICS PRACTICE QUESTION FOR FIRST SEMESTER 2016 E.C**

You May Refer the Information Given Below When You Work On Some Of The Questions

Constant	Symbol	Value
Acceleration due to gravity	g	10m/s^2
density of mercury	$\rho_{\text{Hg-mm}}$	13.6g/cm^3
Density of water	ρ	1000kg/m^3
atmospheric pressure	P_{atm}	$1.01 \times 10^5 \text{ pa}$
Universal gravitational constant	G	$6.67 \times 10^{-11} \text{Nm}^2/\text{kg}^2$

- Which one of the following pair is incorrect the important technologies and the principles of physics **A.** Newton's law of motion ↔ Rocket **B.** Faraday's law of induction ↔ Particles accelerates **C.** Fluid Dynamics ↔ Airplanes **D.** Transmission and reception of electromagnetic waves ↔ Radio and TV
- A wheel starts from rest and rotates with constant angular acceleration to reach an angular speed of 12rad/s in 3s . What is the angle in radians through which it rotates in this time? **A.** 18rad **B.** 9rad **C.** 4rad **D.** 36rad
- Two object are attracted to each other by gravitational force F . if the distance between the object is doubled ,what is the new gravitational force between the object the objects in terms of F ? **A.** $4F$ **B.** $1/4F$ **C.** $16F$ **D.** $1/16F$
- if a particle starts its motion at some point and returns to this point via any path, its average velocity is **A.** Change **B.** remain constant **C.** Zero **D.** Unknown
- Which one is incorrect about physics and chemistry? **A.** Both are overlap under the study of matter **B.** Physics is life science but chemistry is physical science **C.** Both are concern with matter and its interaction with energy **D.** Both are physical sciences

6. A diver initially moving horizontally with speed v dives off the edge of a vertical cliff and lands in the water a distance d from the base of the cliff. How far from the base of the cliff would the diver have landed if the diver initially had been moving horizontally with speed $2v$? **A. d B. $2d$ C. $2d$ D. $4d$**
7. An object is released from rest and falls a distance h during the first second of time. How far will it fall during the next second of time? **A. h B. $2h$ C. $3h$ D. $4h$**
8. What physics concept is applied when we separate the dissolved salt from the water by evaporation? **A. Pressures B. Energy C. Fluids dynamics D. Newton law**
9. In the absence of air resistance, if an object were to fall freely near the surface of the Moon, **A. its acceleration would gradually decrease until the object moves with a terminal velocity. B. the acceleration is constant. C. it will fall with a constant speed. D the acceleration is zero**
10. A disk 8.00 cm in radius rotates at a constant rate of 1200 rev/min about its central axis. What is the radial acceleration of a point on the rim?
A. 377m/s^2 B. 126m/s^2 C. 60m/s^2 D. 1260m/s^2
11. Newton's law of gravitational applies to **A. Small Bodies only B. Plants Only C. All bodies irrespective of their size D. Moon and satellites only**
12. If a ball is thrown directly upwards with twice the initial speed of another, how much higher will it be at its apex? **A. 8 times B. 2 times C. 4 times D. 2 times**
13. A uniform meterstick is balanced at its midpoint with several forces applied as shown below. If the stick is in equilibrium, the magnitude of the force X in Newton's (N) is **A. 50 N B. 100 N C. 200 N D. 300 N**



14. A bowling ball of mass M and radius R , whose moment of inertia about its center is $(2/5)MR^2$, rolls without slipping along a level surface at speed v . The maximum vertical height to which it can roll if it ascends an incline is

(A) $\frac{v^2}{5g}$ (B) $\frac{2v^2}{5g}$ (C) $\frac{v^2}{2g}$ (D) $\frac{7v^2}{10g}$

15. Which one of the following is false about photon particles
- A. It emitted if electrons of atoms jump from higher to a lower atomic orbit
 - B. It travels at the speed of light .
 - C. It absorbed if electron jumps from higher electron orbit to lower electron orbit.
 - D. Photon is elementary particle with no charge, no resting mass and.
16. An object has a weight W when it is on the surface of a planet of radius R . What will be the gravitational force on the object after it has been moved to a distance of $4R$ from the center of the planet? A. $16W$ B. $4W$ C. $1/4W$ D. $1/16W$
17. Planet X has a mass twice that of Earth. The acceleration due to gravity on the surface of this planet is half that on the surface of Earth. If Earth has a radius of 1, what is the radius of Planet X ? A. 1 B. 2 C. 4 D. 8
18. A ball is thrown vertically upward. It has a speed of 10 m/sec when it has reached one half of its maximum height. How high does the ball rise? A. 10 m B. 5 m C. 15 m D. 20 m
19. Suppose the gravitational force between two sphere is 50N. If the magnitude of each is doubles. What is the force between the masses? A. 100N B. 200N C. 100N D. 25N
20. Why the reason sharp edge material easily cut the objects?
- A. They have Low pressure at sharp edge
 - B. they have increase Area when force is applied
 - C. they have high pressure at sharp edge
 - D. They have Decrease Area for a given force is low pressure
21. A model airplane with mass 0.750 kg is tethered by a wire so that it flies in a circle 30.0 m in radius. The airplane engine provides a net thrust of 0.800 N perpendiculars to the tethering wire. What is the torque the net thrust produces about the center of the circle? A. 24Nm B. 4Nm C. 35Nm D. 30Nm
22. From question 17 above, what is acceleration of the airplane tangent to its flight path.
- A. 2m/s^2 B. 1m/s^2 C. 3m/s^2 D. 0.035m/s^2

23. If you throw a ball horizontally with a velocity of 30m/s from a top building 80m height. What is the resultant velocity of ball you thrown when it strikes the ground?
A. 40m/s **B.** 50m/s **C.** 90m/s **D.** 70m/s
24. If you stand on one foot on the floor of your class room, what will be the pressure exert on the floor? **A.** Twice the pressure you exert if you stand on two feet. **B.** Half the pressure you exert if you stand on two feet. **C.** The same as the pressure you exert if you stand on two feet. **D.** Half the pressure you exert if you sit on the floor.
25. Which one of the following is wrong about X-Rays **A.** Creates 2D images **B.** It use primarily to see bones and to detect cancer and pneumonia **C.** It use radiation to produce image **D.** It use primarily to diagnose condition in organs and soft tissues
26. Which of the following is not correct about Kepler's law **A.** that planets do not move with constant speed along their orbits **B.** All Kepler's law describe the motion characteristics of a single planet **C.** The planet to Sun distance is constantly changing as the planet goes around its orbit **D.** Equation $T^2/R^3 = K$ is valid for both circular and elliptical orbits.
27. An egg is placed at the bottom of a vessel filled with water. Common salt is slowly added and dissolved in the water until the egg rises and floats at the surface. From this information what you could conclude? **A.** The density of the salt exceeds the density of the egg. **B.** There is a tendency for Calcium in the egg shell to be repelled by sodium chloride. **C.** Salt sinks to the bottom. **D.** There is no physical explanation.
28. A new planet is discovered that has twice the Earth's mass and twice the Earth's radius. On the surface of this new planet, a person who weighs 500 N on Earth would experience a gravitational force of **A.** 125N **B.** 250N **C.** 500N **D.** 1000N
29. The density of unknown liquid is 500kg/m³. What is the relative density of the liquid? (density of water = 1000kg/m³) **A.** 0.5 **B.** 2 **C.** 5 **D.** 0.2
30. A satellite moves in a stable circular orbit with speed v_0 at a distance R from the center of a planet. For this satellite to move in a stable circular orbit a distance $2R$ from the center of the planet, the speed of the satellite must be Answers B

(A) $\frac{v_0}{2}$ (B) $\frac{v_0}{\sqrt{2}}$ (C) $\sqrt{2}v_0$ (D) $2v_0$

31. If F_1 is the magnitude of the force exerted by the Earth on a satellite in orbit about the Earth and F_2 is the magnitude of the force exerted by the satellite on the Earth, then which of the following is true? **A.** F_1 is much greater than F_2 . **B.** F_1 is slightly greater than F_2 . **C.** F_1 is equal to F_2 . **D.** F_2 is slightly greater than F_1
32. A sleep persons is more stable than the standing persons. What is the reason according to physics concepts?
- A.** A sleeping person has less base area than standing person
B. The center of mass of the sleeping persons is far to the base area.
C. The standing person has more area than sleeping person
D. The center of mass of the sleeping persons is closer to the base area.
33. A wheel 2m in diameter lies in a vertical plane and rotates with a constant angular acceleration of 3rad/s^2 . The wheel starts at rest at $t=0$ and the radius vectors of certain point **P** on the rim makes an angle of 57.3° with the horizontal at $t=1\text{s}$. What is the total acceleration at the point **P**? **A.** $5\sqrt{10}\text{ m/s}^2$ **B.** 16m/s^2 **C.** $3\sqrt{10}\text{ m/s}^2$ **D.** 4m/s^2
34. Which one of the following is not correct about Kepler's law?
- A.** The square of the time it takes the planet to go round the sun is proportional to the cube of its average distance from the sun.
B. Each planet moves so that an imaginary line drawn from the sun to the planet sweeps out equal areas in equal times interval.
C. The orbit of a planet about the Sun is an ellipse, with the Sun at one focus **D.** The square of the time it takes the planet to go round the sun is inversely proportional to the cube of its average distance from the sun.
35. A newly discovered planet has twice the mass of the Earth, but the acceleration due to gravity on the new planet's surface is exactly the same as the acceleration due to gravity on the Earth's surface. The radius of the new planet in terms of the radius R of Earth is ANs **A.** $\frac{1}{2}R$ **B.** $\frac{\sqrt{2}}{2}R$ **C.** $\sqrt{2}R$ **D.** $2R$
36. The angular acceleration of a body, moving along the circumference of a circle, is **A.** Along the radius towards the centre **B.** Along the tangent to its position **C.** Along the axis of rotation **D.** Along the radius, away from centre

37. A horizontal bridge is built across a river. A student standing on the bridge throws a small ball vertically upwards with a velocity 4 m/s . The ball strikes the water surface after 4 s . The height of bridge above water surface is **A.** 60 m **B.** 64 m **C.** 68 m **D.** 56 m
38. Magnitude of the force of gravity F_g and acceleration g influence in mammals: **A)** the blood pressure in arteries, veins, the cardiac output of the heart **B)** only the cardiac output of the heart of an individual person **C)** only the venous pressure of an individual person **D)** doesn't influence the cardiac output
39. A missile is fired for maximum range with an initial velocity of 20 m/s . Range of the missile is **A.** 40 m **B.** 50 m **C.** 60 m **D.** 20 m
40. A ball roll of the top of stair way with the horizontal speed of 1.8 m/s , the steps are 0.2 m high and 0.2 m wide which step will the ball hit first?
A. First step **B.** Second step **C.** Third step **D.** Forth step
41. The velocity of blood flow, according to the equation of continuity, is: **A)** inversely proportional to cross-sectional area of blood vessels **B)** directly proportional to cross-sectional area of blood vessels **C)** independent from cross-sectional area of blood vessels **D)** directly proportional to blood viscosity.
42. Which one of the following is **Not Correct** about electromagnetic radiations?
A. High- frequency electromagnetic waves are more able to penetrate than high frequency waves.
B. The Larger the wave wavelength of any electromagnetic waves probing a material the larger the detail it is possible to resolve.
C. High- frequency electromagnetic can carry more information per unit time than low frequency waves.
D. The shorter the wave wavelength of any electromagnetic waves probing a material the smaller the detail it is possible to resolve.
43. A wheel rotates with a constant acceleration of 2.0 rad/s^2 . If the wheel starts from rest, how many revolutions will it make in the first 10 seconds ? **A.** 16 revolution **B.** 160 revolution **C.** 6 revolution **D.** 1 revolution

44. A projectile is fired in such a way that its horizontal range is equal to three times its maximum height. What is the angle of projection **A.** 45° **B.** 60° **C.** 76° **D.** 53°
45. Which of the following electromagnetic radiations has the highest wavelength?
A. Infra-red **B.** Gamma rays **C.** Ultra-violet **D.** radio wave
46. An object projected at an angle θ with the velocity 50m/s reaches its maximum height in 2.5s , What is the range of projected object? **A.** 200m **B.** 100m **C.** 80m **D.** 125m
47. What are the major physics concepts used in Radar? **A.** Thermal physics **B.** Fluids mechanics **C.** Transmission and reflection of electromagnetic waves **D.** Astrophysics
48. Blood flows at an average speed of 0.40 m/s in a horizontal artery of radius 1.0 cm and the blood past a constriction where the radius of the opening is 0.30 cm. The average pressure is $1.4 \times 10^4 \text{ N/m}^2$ above atmospheric pressure (the gauge pressure). What is the gauge pressure of the blood as it moves past the constriction?
A. 4.44kpa **B.** 4.22kpa **C.** 2.24Kpa **D.** 2.22Kpa
49. A woman is rotating a bucket of water in a vertical circle of radius 0.9m. The mass of bucket and water is 5kg. What is the bucket's minimum speed at the top of the circle if no water is to spill out? **A.** 0 **B.** 1m/s **C.** 3m/s **D.** 9m/s
50. 12. A car starts from rest and uniformly accelerates to a final speed of 20.0 m/s in a time of 15.0 s. How far does the car travel during this time?
A. 150 m **B.** 300 m **C.** 450m **D.** 600 m