

INDIAN SCHOOL AL WADI AL KABIR

DEPARTMENT OF SCIENCE

POMT-OBJECTIVE BASED

PHYSICS-SET-2

MCQ

No	Questions	Mark
1	A plate , a ball and a toy car all have the same mass .The one having more inertia is the a) Plate b) Ball c) Toy car d) All have equal inertia	1
2	Rocket works on the principle of conservation of a) Mass b) Energy c) Momentum d) Velocity	<u>1</u>
3	The weight of an object at the centre of the earth of radius R is a) Zero b) Infinite c) R times the weight at the surface of the earth d) $1/R^2$ times the weight at surface of the earth.	
4	Which of the following statements are true for mixtures? (i) Mixtures contain only one type of particles. (ii) Mixtures contain two or more different types of particles. (iii) Mixtures can be separated only by chemical methods. (iv) Mixtures can be separated by physical methods. (a) (i) and (ii) (b) (ii) and (iii) (c) (ii) and (iv) (d) (iii) and (iv)	
5	A colloidal solution is: (a) Homogeneous mixture (b) Heterogeneous and transparent mixture	

	<p>(c) Heterogeneous mixture in which particles can be seen with naked eyes.</p> <p>(d) Heterogeneous mixture in which particles cannot be seen with naked eyes.</p>	
6	<p>Which of the following is the correct electronic configuration of Magnesium (12)?</p> <p>(a) 2,8,1</p> <p>(b) 2,8,2</p> <p>(c) 8,2,2</p> <p>(d) 2,2,8</p>	
7	<p>Which of the following can be called a suspension?</p> <p>(a) Milk</p> <p>(b) Milk of magnesia</p> <p>(c) Salt solution</p> <p>(d) Vinegar</p>	
8	<p>In ammonia, nitrogen and hydrogen are always present in the ratio 14:3 by mass. The law which explains the above statement is:-</p> <p>(a) Law of conservation of mass</p> <p>(b) Law of definite/constant proportions</p> <p>(c) Law of conservation of energy</p> <p>(d) Law of multiple proportions.</p>	
9	<p>Antibiotics work against _____.</p> <p>(a) elephantiasis</p> <p>(b) virus</p> <p>(c) bacteria</p> <p>(d) parasites</p>	
10	<p>The method of immunisation was first tried by _____.</p> <p>(a) Edward Jenner</p> <p>(b) Robert Hooke</p> <p>(c) Louis Hook</p> <p>(d) Louis Pasteur</p>	
11	<p>Listed below are a few diseases.</p> <p>(i) Tuberculosis</p> <p>(ii) Cancer</p> <p>(iii) Common cold</p> <p>(iv) Viral fever</p>	

	<p>From the above-mentioned diseases, which are classified as acute diseases?</p> <p>(a) (i) and (ii) (b) (ii) and (iii) (c) (iii) and (iv) (d) (i) and (iv)</p>	
12	<p>The AIDS virus cannot be transmitted by</p> <p>(a) sexual contact (b) blood transfusion (c) breast feeding (d) hugs and hand shake</p>	
13	<p>Diseases where microbes are the immediate cause are called _____ Disease.</p> <p>(a) non-infectious (b) acute (c) chronic (d) infectious</p>	
14	<p>We should not allow mosquitoes to breed in our surroundings because they –</p> <p>(a) cause pollution and multiply very fast (b) are vectors for many diseases (c) bite us and cause many skin infections (d) useless and not important insects</p>	
	<p>ASSERTION REASON TYPE QUESTIONS</p> <p>Directions: In each of the following questions, a statement of Assertion is given and a corresponding statement of Reason is given just below it. Of the statements, given below, mark the correct answer as:</p> <p>(a) Both assertion and reason are true and reason is the correct explanation of assertion. (b) Both assertion and reason are true but reason is not the correct explanation of assertion. (c) Assertion is true but reason is false. (d) Both Assertion and Reason are false.</p>	
15	<p>Assertion:- When a beam of light is passed through a colloidal solution, the path of light is illuminated. Reason:- The colloidal particles are big enough to scatter a beam of light and thus make the path of light visible.</p>	

16	Assertion (A): Particles of solution cannot be seen with naked eye. Reason (R): In solution, particle size is less than 1nm.	
17	Assertion: A solution of table salt in a glass of water is homogeneous. Reason: A solution having different composition throughout is homogeneous.	
18	Assertion: If the net external force on the body is zero, then its acceleration is zero. Reason: Acceleration does not depend on force.	
19	Assertion : No work is done when a woman carrying a load on her head, walks on a level road with a uniform velocity. Reason : No work is done if force is perpendicular to the direction of displacement.	
20	Assertion: Tuberculosis is a bacterial disease. Reason: Tuberculosis is mainly transmitted by droplet infection.	
21	Assertion: Communicable diseases are called infectious diseases. Reason: Cancer is a communicable disease.	
22	Assertion: Vaccination is to grow the production of specific antibodies. Reason: Antibodies confer immunity against subsequent infection.	
CASE STUDY BASED QUESTIONS		
	CASE: The force that makes everything fall to Earth is called gravity. It is a mysterious force that has been studied by scientists since Isaac Newton was the first person to mathematically describe it. His theory is called Newton's Law of Universal Gravitation. Years later, Albert Einstein's Theory of Relativity made improvements to Newton's original theory. Of course, it can be said the person who dropped something may have discovered gravity but it can now be scientifically explained.	

	<p>It was in 1687 that Newton published the Philosophiae Naturalis Principia Mathematica (which means 'Mathematical principals of Natural Philosophy'). It was his most important work, though related to gravity, he also described the three laws of motion. The work is considered one of the most important in the history of science. Not only did it introduce the theory of gravity, it defined the principals or laws of motion in modern physics. The theory of gravity ultimately was used to explain the movement of the planets and the Sun.</p> <p>All objects have gravity, though some objects have much more gravity than others. For example, the Sun and the Earth have much more gravity than other objects. The amount of gravity an object has depends on the size of mass of the object and how close a person is to the object. The closer the stronger the gravity.</p> <p>In summary, Isaac Newton is responsible for introducing the mathematics behind the concept of gravity, which led other scientists to understand the movement of the Sun and the planets, the different forces of gravity and the variables involved, as well as the introduction of the three laws of motion in modern day physics. All objects fall at the same speed, and the pull of gravity depends on the mass of an object and how close a person is to an object.</p>	
23	<p>As we move from equator to poles , the value of G</p> <ol style="list-style-type: none"> Increases Decreases Remains same Information incomplete 	
24	<p>Weight of 1 kg is</p> <ol style="list-style-type: none"> 9.8 newton 1 kg-wt Both (a) and (b) None of the above 	
25	<p>The value of G in the law of gravitation</p> <ol style="list-style-type: none"> Depends on mass of the earth only Depends on radius of the earth only Depends on both mass and radius of the earth Is independent of mass and radius of the earth 	
26	<p>As we move from equator to poles , the value of G</p> <ol style="list-style-type: none"> Increases Decreases Remains same 	

	d) Information incomplete											
27	<p>Match the Column I with Column II</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Column I</th> <th>Column II</th> </tr> </thead> <tbody> <tr> <td>1) Law of Gravitation</td> <td>A) mg</td> </tr> <tr> <td>2) Value of G</td> <td>B) Tides in ocean</td> </tr> <tr> <td>3) Value of g on earth</td> <td>C) $6.6 \times 10^{-11} \text{ Nm}^2/\text{kg}^2$</td> </tr> <tr> <td>4) Weight</td> <td>D) 9.8 m/s^2</td> </tr> </tbody> </table> <p>a) 1.(A) 2. (B) 3.(C) 4. (D) b) 1.(B) 2.(C) 3.(D) 4. (A) c) 1.(B) 2.(C) 3.(A) 4. (D) d) 1.(C) 2.(B) 3.(A) 4. (D)</p>	Column I	Column II	1) Law of Gravitation	A) mg	2) Value of G	B) Tides in ocean	3) Value of g on earth	C) $6.6 \times 10^{-11} \text{ Nm}^2/\text{kg}^2$	4) Weight	D) 9.8 m/s^2	
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Case	<p>The atomic number is the number of protons in the nucleus of an atom. The number of protons define the identity of an element. The number of protons and neutrons combined to give us the mass number of an atom. It is represented using the letter 'A.' As both protons and neutrons are present in the nucleus of an atom, they are together called nucleons.</p>											
28	<p>An atom of an element has 7 electrons in the L shell. The atomic number of this element is:-</p> <p>(a) 10 (b) 9 (c) 19 (d) 16</p>											
29	<p>An atom of an element has mass number 35 and atomic number 16. The number of electrons, protons and neutrons are:-</p> <p>(a) Electrons-16, protons-16, neutrons-19 (b) Electrons-19, protons-16, neutrons-16 (c) Electrons-16, protons-19, neutrons-16 (d) Electrons-19, protons-19, neutrons-16</p>											
30	<p>If the mass number of an atom of an element is 23 and its atomic number is 11, then the number of neutrons is:-</p> <p>(a) 11 (b) 23 (c) 12</p>											

(d) 34

31

The following data represents the number of electrons, protons and neutrons in an atom of element D

Element	Protons	Neutrons	Electrons
D	17	22	17

What is the mass number of element D?

- (a) 22
- (b) 34
- (c) 39
- (d) 17

32

The number of electrons in the atom of an element X is 15 and the number of neutrons is 16. Which of the following is the correct representation of an atom of this element?

- i. ${}_{15}^{31}X$
 - ii. ${}_{16}^{31}X$
 - iii. ${}_{15}^{16}X$
 - iv. ${}_{16}^{15}X$
- (a) (i)
 - (b) (ii)
 - (c) (iii)
 - (d) (iv)

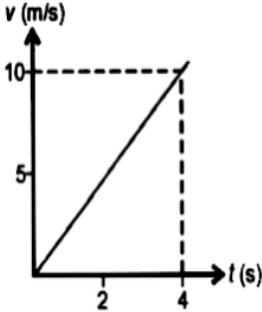
Ans-(a)(i)

Case



Acute refers to the sudden onset of the disease that lasts for a short period. An acute condition is one where symptoms appear suddenly and worsen rapidly. Acute pain tells your body you've been hurt, say when you fall, stub a toe, burn your finger, etc. It appears suddenly, peaks as a signal to your body to heal the injury, and wanes away as it heals before it disappears completely once the injury is healed. Similarly, acute illnesses like flu or

	<p>common cold afflict a person suddenly, worsen over a short period, and then disappear.</p> <p>Chronic illness means illness lasts for months, usually more than 3 months. Chronic pain, on the other hand, creeps up on the person gradually, and by the time he feels its presence, he realizes it has been there for a while. It lasts for weeks, even months beyond the expected recovery; the pain itself is a disease and becomes a part of the person. Back pain that lasts for months and worsens over time is a good example of chronic pain.</p>	
33	<p>The illness that lasts for three or more months is called –</p> <p>(a) Acute disease (b) Chronic disease (c) Infectious disease (d) Non-infectious disease</p>	
34	<p>The illness that lasts for a short period of time is called –</p> <p>(a) Acute disease (b) Chronic disease (c) Infectious disease (d) Non-infectious disease</p>	
35	<p>Diarrhea, cholera, typhoid are the diseases that have one thing in common that is</p> <p>a. All of them are caused by bacteria b. All of them is transmitted by contaminated food and water c. All of them are cured by antibiotics d. All of the above</p>	
36	<p>Category of Diseases based on duration of disease are</p> <p>(a) Communicable and non-communicable diseases (b) Infectious and non-infectious diseases (c) Acute and chronic diseases (d) Both (a) and (b)</p>	
37	<p>‘Pain itself is a disease and becomes a part of the person’</p> <p>The above statement is the reference of –</p> <p>(a) Contagious infection (b) Acute infection (c) Communicable infection (d) Chronic infection</p>	

Numerical based MCQ		
38	<p>The velocity –time graph of a body of 5 kg moving with the help of a force is shown .Then the force involved is</p>  <p>a) 20 N b) 125N c) 12.5 N d) 2.0 N</p>	
39	<p>A boy of mass 50 kg running in 5 m/s jumps on to a 20 kg trolley travelling in the same direction at 1.5 m/s .Find their common velocity.</p> <p>a) 36 m/s b) 4m/s c) 2 m/s d) 18 m/s</p>	
40	<p>A car weighing 1600 kg moving with a velocity of 30 m/s retards uniformly coming to rest in 20 seconds. Calculate the acceleration of the car.</p> <p>a) -1.5m/s^2 b) -3m/s^2 c) 1.5m/s^2 d) 2m/s^2</p>	

ANSWER KEY-SET-2

Q.no	Answer	marks
1	d) All have equal inertia	1
2	c) momentum	1
3	a) zero	1
4	(c)(ii) and (iv)	1

5	(d)Heterogeneous mixture in which particles cannot be seen with naked eyes.	1
6	(b)2,8,2	1
7	(b) Milk of magnesia	1
8	-(b)Law of definite/constant proportions	1
9	-(c) bacteria	1
10	-(a) Edward Jenner	1
11	(c) (iii) and (iv)	1
12	(d) hugs and hand shake	1
13	(d) infectious	1
14	(b) are vectors for many diseases	1
15	(a). Both (A) and (R)are true and (R)is the correct explanation of assertion.	1
16	(a)Both A and R are true and R is the correct explanation of A	1
17	(c)A is true but R is false.	1
18	(c) Assertion is true but reason is false	1
19	(a) Both assertion and reason are true and reason is the correct explanation of assertion.	1
20	Both (A) and (R) are true but (R) is not the correct explanation of (A)	1
21	(A) is true but (R) is false	1
22	Both (A) and (R) are true and (R) is the correct explanation of (A)	1
23	a)Increases	1
24	a) 9.8 newton	1
25	(d)Is independent of mass and radius of the earth	1
26	c) Remains same	1
27	(B) 2.(C) 3.(D) 4. (A)	1
28	(b)9	1
29	(a)Electrons-16, protons-16, neutrons-19	1
30	(c)12	1

31	(c)39	1
32	(a)(i)	1
33	(b) Chronic disease	1
34	(a) Acute disease	1
35	d. All of the above	1
36	(c) Acute and chronic diseases	1
37	(d) Chronic infection	1
38	c) 12.5 N	1
39	b) 4 m/s	1
40	a) -1.5m/s^2	1