**Gulistan Academy**

Physics (9th) Max.Marks = 40

Chapter No.1 (Physical Quantities and Measurement) Pass Marks = 20

**Time = 1 Hour** Teacher Name: M.Maaz

**Question No.1: Give short answers. (2x12 = 24)**

1. *What is the difference between Base quantities and Derived quantities?*
2. *Estimate your age in seconds.*
3. *What is vernier constant?*
4. *Why the use of Zero Error is necessary in a measuring instrument?*
5. *What is Stop Watch? What is the least count of the mechanical watch used in the laboratory?*
6. *Why we need to measure the small intervals of time?*
7. *What do you mean by significant figures in a measurement?*
8. *What is the relation between prefixes “****micro****” and “****pico****”?*
9. *Shortly describe the method of taking reading from a measuring cylinder.*
10. *Which one of the following is the most accurate Balance to measure the mass of a substance? Explain.*

***1-****Beam Balance* ***2-****Physical Balance* ***3-****Electronic Balance*

1. *Write these numbers using the prefixes:*
2. *20,000* ***g******2-*** *4,800,000* ***W 3-*** *0.00004* ***m 4-*** *0.00580* ***s***
3. *What is the number of significant figures in the following measurements?*
4. *1.009* ***m******2-*** *0.00450* ***kg******3-*** *1.66 x 10-27* ***kg******4-*** *2016* ***s***

**Question No.2: (5+3 = 8)**

1. *Explain how to take reading from Vernier Callipers.*
2. *A screw gauge has 50 marks on its circular scale. The pitch of screw gauge is 0.5 mm. What is its least count?*

**Question No.3: (5+3 = 8)**

1. *What are Physical Quantities? Explain their different types.*
2. *Write the following in standard form:*
3. *6400* ***km******(b)*** *380 000* ***km***

***(c)*** *300 000 000* ***ms-1******(d)*** *Number of seconds in a day*

***(e)*** *3 84 000 000* ***m******(f)*** *0.00045* ***s***

***Best of luck***

**Gulistan Academy**

Physics (9th) Max.Marks = 40

Chapter No.2 (Kinematics) Pass Marks = 20

**Time = 1 Hour** Teacher Name: M.Maaz

**Question No.1: Give short answers. (12x2 = 24)**

1. *Differentiate between* ***rest*** *and* ***motion****.*
2. *Differentiate between* ***scalars*** *and* ***vectors****.*
3. *Can a body moving with constant speed have some acceleration?*
4. *What will be the shape of the* ***speed-time*** *graph of a body moving with variable speed?*
5. *How to represent vector quantities graphically?*
6. *Why the addition and subtraction for vectors is not as same as that for scalars?*
7. *A train runs with a uniform velocity of* ***36 kmh-1****for* ***10 s****. Find the distance covered by it.*
8. *Define velocity and acceleration.*
9. *What do you mean by the term* ***position****? Explain.*
10. *A player completes a* ***100 m*** *race in* ***12 s****. Find its average speed.*
11. *A stone has been released from the top of a tower. It takes about* ***5 seconds*** *to reach the Earth. What will be the height of the tower?*
12. *How can you find the distance covered by an object by its* ***speed-time*** *graph?*

**Question No.2: (5+3 = 8)**

1. *Explain the different types of motion with examples.*
2. *The velocity of a car is* ***10 ms-1****. How much distance it should cover in half of a minute with an acceleration of* ***0.2 ms-2****? What will be its final speed?*

**Question No.3: (5+3 = 8)**

1. *Derive the third equation of motion by graphical method.*
2. *When breaks are applied, the speed of train reduces from* ***96 kmh-1****to* ***48 kmh-1****after covering a distance of* ***800 m.*** *How more distance it will cover before coming to rest?*

***Best of luck***

**Gulistan Academy**

Physics (9th) Max.Marks = 40

Chapter No.3 (Dynamics) Pass Marks = 20

**Time = 1 Hour** Teacher Name: M.Maaz

**Question No.1: Give short answers. (122 = 24)**

1. *Differentiate between* ***mass*** *and* ***weight****.*
2. *What is the law of inertia?*
3. *Why is it dangerous to travel on the roof of a bus?*
4. *If action and reaction are equal and opposite in direction then how a body moves?*
5. *What is the importance of the law of conservation of momentum?*
6. *When a gun fires, it recoils. Why?*
7. *Why the rolling friction is less than the sliding friction?*
8. *What will be the* ***time*** *required to produce a* ***22 Ns*** *change in momentum by a force of* ***20 N****?*
9. *Define momentum. Also write its expression and units.*
10. *A force produces an acceleration of* ***10 ms-2*** *in a mass of* ***5 kg****. What will be the amount of acceleration produced by this force in a mass of* ***8 kg****?*
11. *Differentiate between Centripetal and Centrifugal forces.*
12. *Write a short note on Cream Separator.*

**Question No.2: (5+3 = 8)**

1. *Derive the expression for the acceleration and the tension in the string when the objects attached to the string are in vertical motion.*
2. *The weight of a body is* ***20 N****. What will be the force needed to take it vertically up with a uniform acceleration of* ***2 ms-2****?*

**Question No.3: (5+3 = 8)**

1. *What is the law of conservation of momentum? Explain it by taking the example of a rifle and a bullet.*
2. *What will be the force of friction between a wooden block of* ***5 kg*** *and a stone of Calcium Carbonate? The value of coefficient of friction between wood and Calcium Carbonate is* ***0.6****.*

***Best of luck***

**Gulistan Academy**

Physics (9th) Max.Marks = 40

Chapter No.4 (Turning Effect of Forces) Pass Marks = 20

**Time = 1 Hour** Teacher Name: M.Maaz

**Question No.1: Give short answers. (12x2 = 24)**

1. *Define Like and Unlike parallel forces.*
2. *What do you mean by the resultant of forces?*
3. *What is a rigid body?*
4. *What is the principle of moments?*
5. *When a body is said to be in equilibrium?*
6. *Give an example of a body which is at rest but not in equilibrium.*
7. *Why a body can’t be in equilibrium if only a single force acts on it?*
8. *Why the heights of vehicles kept as small as possible?*
9. *Give an example of a moving body which is in equilibrium.*
10. *A force of* ***50 N*** *is making an angle of* ***30o*** *with the* ***x-axis****. Find its perpendicular components.*
11. *A mechanic tights a nut with a spanner of length* ***15 cm*** *by applying a force of* ***200 N****. Find the torque needed to tight the nut.*
12. *What do you mean by Centre of mass and Centre of gravity?*

**Question No.2: (5+3 = 8)**

1. *What is the resolution of forces? How to factorize a force into its rectangular components?*
2. *A picture frame is hanging with two vertical strings. The tensions in the strings are* ***3.8 N*** *and* ***4.4 N*** *respectively. Find the weight of the picture frame.*

**Question No.3: (5+3 = 8)**

1. *Explain the different states of equilibrium with examples.*
2. *A nut is tighten with a force of* ***200 N*** *by using a spanner of length* ***10 cm.*** *What will be the length of spanner required to loose it by applying a force of* ***150 N****?*

***Best of luck***

**Gulistan Academy**

Physics (9th) Max.Marks = 40

Chapter No.5 (Gravitation) Pass Marks = 20

**Time = 1 Hour** Teacher Name: M.Maaz

**Question No.1: Give short answers. (12x2 = 24)**

1. *What do you mean by Gravitational Force?*
2. *Do you attract the Earth or the Earth attracts you? Explain.*
3. *What is Field Force?*
4. *What do you mean by the strength of gravitational field?*
5. *What is the importance of the law of gravitation?*
6. *The value of is different at different places. Why?*
7. *How the value of changes with altitude?*
8. *What are artificial satellites?*
9. *How the law of gravitation of newton is helpful in understanding the motion of satellites?*
10. *Why the communication satellites are sent to geostationary orbits?*
11. *The two lead balls each of mass* ***1000 kg*** *are at* ***1 m*** *apart. Find the gravitational force between them by which they attract to each other.*
12. *At what height the value of* *becomes one fourth of its value on the surface of the Earth?*

**Question No.2: (5+3 = 8)**

1. *Calculate the mass of the Earth by first deriving the expression for it.*
2. *The gravitational force; between the two similar lead balls,* ***1 m*** *apart, is* ***0.006673 N****. Find their masses.*

**Question No.3: (5+3 = 8)**

1. *Derive the expression for the orbital speed of Artificial Satellite. Also calculate the orbital speed of artificial satellite near the surface of the Earth.*
2. *A communication satellite is* ***42000 km*** *high from the surface of the Earth. Find its orbital speed.*

***Best of luck***

**Gulistan Academy**

Physics (9th) Max.Marks = 40

Chapter No.6 (Work & Energy) Pass Marks = 20

**Time = 1 Hour** Teacher Name: M.Maaz

**Question No.1: Give short answers. (12x2 = 24)**

1. *Define work. What is its SI unit?*
2. *When does a force work? Explain.*
3. *Why we need energy?*
4. *Define Potential Energy. Also writes its formula.*
5. *Why are the fossil fuels said to be non-renewable sources of energy?*
6. *Write the names of any five devices which convert electrical energy into mechanical energy.*
7. *What do you mean by the efficiency of a system?*
8. *What do you mean by term Power? Define Watt.*
9. *A pump can transfer a* ***200 kg*** *mass of water to a height of* ***6 m*** *in* ***10 s****. Find the power of the pump.*
10. *Write a short note on Nuclear Fuels.*
11. *Write the names of some Renewable Energy Sources.*
12. *What is the Einstein’s mass-energy equation?*

**Question No.2: (5+3 = 8)**

1. *Define Kinetic Energy. Also derives its formula.*
2. *A* ***500 g*** *stone has thrown vertically up by an initial velocity of* ***15 ms-1****. Find its:*
3. *P.E. at the highest point* ***(2)*** *K.E. just before hitting the ground*

**Question No.3: (5+3 = 8)**

1. *Shortly explain any five forms of energy.*
2. *A motor of power* ***1 hp*** *is used to derive a water pump. Water pump takes* ***10 min*** *to fill an over-head tank. The capacity of tank is* ***800 liter*** *and height is* ***15 m****. What was the work done by electric motor on water pump to fill the tank? Also find out the efficiency of the system.*

***Best of luck***

**Gulistan Academy**

Physics (9th) Max.Marks = 40

Chapter No.7 (Properties of Matter) Pass Marks = 20

**Time = 1 Hour** Teacher Name: M.Maaz

**Question No.1: Give short answers. (12x2 = 24)**

1. *Is there any fourth state of matter? Explain.*
2. *What do you mean by the term Density? What is its SI unit?*
3. *Define the term Pressure.*
4. *Why is it not useful to use water in Barometer?*
5. *Why the atmospheric pressure changes with altitude?*
6. *State Pascal’s Law.*
7. *State Archimedes Principle.*
8. *What do you mean by the up thrust force?*
9. *Explain how submarines travel in and on the surface of water.*
10. *What is Hook’s Law? What do you mean by elastic Limit?*
11. *The mass of a stone of volume* ***200 cm3*** *is* ***500 g****. What is its density?*
12. *Define Stress and Strain.*

**Question No.2: (5+3 = 8)**

1. *Explain the working of Hydraulic Press.*
2. *The weight of a body in air is* ***18 N.*** *Its weight becomes* ***11.4 N*** *when it is dipped into the water. Find its density.*

**Question No.3: (5+3 = 8)**

1. *What is Young’s Modulus? What are its units? Derive an expression for it.*
2. *A* ***2 mm*** *increase in length is observed in a steel wire by applying a force of* ***4000 N*** *on its cross sectional area of* ***2 10-5 m2****. Find the Young’s Modulus of the wire. The length of the wire is* ***2 m****.*

***Best of luck***

**Gulistan Academy**

Physics (9th) Max.Marks = 40

Chapter No.8 (Thermal Properties of Matter) Pass Marks = 20

**Time = 1 Hour** Teacher Name: M.Maaz

**Question No.1: Give short answers. (12x2 = 24)**

1. *Differentiate between Temperature and Heat.*
2. *Heat flows from hot body to cold body. Why?*
3. *What do you mean by the Internal Energy of a body?*
4. *What is the effect of heat on the motion of the gas molecules?*
5. *What is thermometer?*
6. *Define Specific Heat?*
7. *Define the latent heat of vaporization.*
8. *Evaporation causes cooling. Explain.*
9. *What will be the amount of heat required to increase the temperature of* ***0.5 kg*** *mass of water from* ***10oC*** *to* ***65oC****?*
10. *Write a short note on Bimetallic Strip.*
11. *What will be temperature on Kelvin scale? While the temperature on Celsius scale is* ***20oC****.*
12. *Convert the* ***50oC*** *temperature on Celsius scale into Fahrenheit scale.*

**Question No.2: (5+3 = 8)**

1. *What do you mean by Evaporation? On what factors it depends? Explain.*
2. *There is* ***1.2 m3*** *of air in the balloon at* ***15oC****. Find its volume at* ***40oC****. While the value of coefficient of volume expansion of air is* ***3.67 X 10-3****.*

**Question No.3: (5+3 = 8)**

1. *What do you mean by the Latent Heat of Fusion? Find the latent heat of Ice.*
2. *What will be the amount of heat required to convert a* ***100 g*** *of water into steam at* ***100oC****? While the latent heat of vaporization of water is* ***2.26 X 106 Jkg-1****.*

***Best of luck***

**Gulistan Academy**

Physics (9th) Max.Marks = 40

Chapter No.9 (Transfer of Heat) Pass Marks = 20

**Time = 1 Hour** Teacher Name: M.Maaz

**Question No.1: Give short answers. (12x2 = 24)**

1. *Why metals are good conductors?*
2. *Why there is no conduction in gasses?*
3. *What do you mean by convection currents?*
4. *How heat reaches from Sun to us?*
5. *How can you compare different surfaces using Lasile Cube?*
6. *What is greenhouse effect?*
7. *What are Thermals?*
8. *Define Land and Sea Breezes.*
9. *Describe the convection currents in air shortly.*
10. *When the transfer of heat takes place? Explain.*
11. *How the conduction is different from convection?*
12. *On what factors the heat emitted by radiations depends?*

**Question No.2: (5+3 = 8)**

1. *What is thermal conductivity? Derive an expression for it.*
2. *The area of roof of width* ***20 cm*** *is* ***200 m3****. The internal temperature of the house is* ***15oC*** *and external temperature is* ***35oC****. Find the rate by which thermal energy pass through the roof. While the value of k is* ***0.65 Wm-1K-1****.*

**Question No.3: (5+3 = 8)**

1. *Write any five uses of conductors and non-conductors.*
2. *How much heat will destroy from a glass window of size* ***2.5 m X 2.0 m*** *in one hour? While the internal temperature is* ***25oC*** *and external temperature is* ***5oC****. The width of glass is* ***0.8 cm****. The value of k for glass is* ***0.8 Wm-1****.*

***Best of luck***