KITH & KIN INTERNATIONAL COLLEGE

7/11 Kaoli Olusanya Street, Owode Ibeshe, Ikorodu, Lagos State.

FIRST TERM EXAMINATION 2025/2026 ACADEMIC SESSION

NAME					
SUBJECT	PHYSICS	CLASS	SSS 1	DURATION	2 Hours

SECTION A

OBJECTIVE TEST [50 Marks]

Instruction: *This Paper consists of two(2) Sections A and B. Section A is Objective Test of fifty (50) marks questions and Section B isTheory questions consisting of eight (8) questions to answer question 1 and any other four (4) questions. (Take g = 10m/s^2*

1. Which of the following is a fundamental unit?
   A. Kgm^{-3}
   B. m^3
   C. Nm^{-2}
   D. Kg
2. A body which is uniformly retarded comes to rest in 10s after travelling a distance of 20m. Calculate its initial velocity
   A. 0.5 ms^{-1}
   B. 2.0ms^{-1}
   C. 4.0ms^{-1}
   D. 20.0 ms^{-1}
3. The distance travelled by a Particle starting from rest is plotted against the square of the time elapsed from the commencement of the motion. The resulting graph is linear. The speed of the graph is a measure of

A. initial displacement
   B. initial velocity
   C. acceleration
   D. speed
4. Which is the incorrect formula for a body accelerating uniformly?
   A. $v^2 = u^2 + 2as$
   B $s = \frac{1}{2}ut + at^2$
   C. $v^2 - u^2 = 2as$
   D. $v = u + at$
5. The slope of a displacement-time graph is equal to
   A. acceleration
   B. uniformly velocity
   C. uniform speed
   D. instantaneous speed
6. A moving object is said to have uniform acceleration if its
   A. displacement decreases at a constant rate
   B. speed is directly proportional to time
   C. velocity increases by equal amount in equal time intervals
   D. velocity varies inversely with time
7. A force of 40N acts on an area of 10m^2. What is the pressure exerted on the surface?
   A. 8Pa
   B. 4Pa
   C. 400Pa
   D. 10Pa
8. Density is defined as the ratio of mass to
   A. pressure
   B. area
   C. volume
   D. Length
9. Pressure can be measured in the following except
   A. bar
   B. N/m^2
   C.Pascal
   D. Nm^2
10. Which of the units of the following physical quantities is not derived unit?
    A. Area
    B. Thrust

C. Pressure
D. Mass

11. Which of the following quantities has the same unit as energy?
    A. Power
    B. Work
    C. Force
    D. Momentum
12. Which of the following is a non-renewable energy source?
    A. coal
    B. solar
    C. tides
    D. hydro
13. Calculate the distance between the points A (2, 3) and B (-5, 1)

A. 7.3 units
B. 10 units
C. 7.6 units
D. 9.5 units

14. Which of the following is NOT an example of a force field?

A. Magnetic Force
B. Electric Field
C. Frictional Force
D. Gravitational Force

15. The international agreed system of unit (S.I.) for physical measurement are

A.lb, ft, sec
B. g, m, sec
C. kg, m, sec
D. cm, g, sec

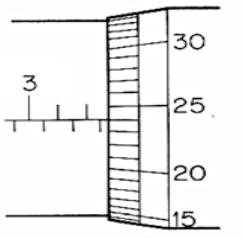
16. Which of the units of the following physical quantities are derived?
    I. Area; II. Thrust; III.Pressure; IV. Mass

A. I, II, III and IV
B. I, II and III only
C. I, II and IV only
D. I and IV only

17. Which of the following instrument is suitable for taking the most accurate measurement of the internal diameter of a test-tube?
    A. Metre rule
    B. A Pair of callipers
    C. A micrometer screw gauge
    D. A tape rule
18. Which of the following statements about mass and weight of a body is not correct? Its
    A. mass is a scalar quantity
    B. weight is a function of the gravitational pull on it
    C. mass on earth and on the moon is the same
    D. weight at the equator and at the poles is the same
19. The weight of a body is measured with
    A. spring balance
    B. beam balance
    C. chemical balance
    D. lever balance
20. Which instrument is best for measuring small quantity of liquid?
    A.Burette
    B. Pipette
    C. Cylinder
    D. Beaker
21. What is the dimension of force?
    A. MLT^{-2}
    B. $ML^{2}T$
    C. $ML2T^{-2}$
    D. MLT^{-3}
22. The diagram below represents a portion of a vernier calliper. What is its reading?

A.12.24 cm
B. 12.16mm
C. 12.15mm
D.12.18mm

23. Which of the following instruments is the best for measuring the diameter of the constantan wire
    A. Callipers
    B. Mere rule
    C.Micrometer screw guage
    D. watt meter
24. Hydrometer is an instrument used for measuring _____
    A. relative humidity
    B. dew point
    C. relative density
    D. attitude
25. The diagram below represents a portion of a micrometer screw guage. What is the reading?



A. 5.25mm
B. 5.16mm
C. 5.74 mm
D. 5.15mm

26. Which of the following types of motion does a body undergo when moving in a haphazard manner?
A. Random motion
B.Translatory motion
C. Rotational motion
D. Vibratory motion
27. What type of motion does the skin of a talking drum perform when it is struck with a drum stick?
A. Rotational
B. Translational
C. Random
D. Vibratory
28. The motion of the prongs of sounding turning fork is
A. rotational
B. vibratory
C. vibratory and rotational
D. random
29. The study of motion without involving the force which causes the motion is called _____
A. kinematics
B. inertia
C. electromagnetic
D. dynamics
30. The magnitude of the force required to make an object of mass M move with speed V in a circular Path of radius R is given by the expression
A. $\frac{mr}{v}$
B. $\left(\frac{mr}{v}\right)^2$
C. $\frac{mv^2}{r}$
D. $\frac{mv}{2}$
31. The following are types of motion except
A. random motion
B. rotational motion
C. nuclear motion
D.oscillatory motion.
32. The motion of the prongs of a sounding turning fork is
A. random
B. translational
C. rotational
D. vibratory
33. Friction depends on the Except _____
A.area of surface in contact
B. Surface roughness
C. Normal force
D. Nature of materials
34. A metal block of mass 8kg lies on a rough horizontal platform. If the horizontal resistive force is 10N, find the coefficient of static friction (g=10m/s2)
A. 0.25
B. 0.125
C. 0.8
D. 0.124
35. A metal block of mass 0.5kg lies on a rough horizontal plane, what is the normal reaction (g=10m/s2)
A. 50N
B. 0.05N
C. 500N
D. 5N
36. Which of this physicist is known for the law of elasticity
A. Robert Hooke
B. Georg Ohm
C. Lord Kelvin
D. Michael Faraday
37. The old method of measuring time using the shadow of the sun is called a
A. Pendulum
B. Stopwatch
C. Sundial
D. Sand clock
38. What is the relationship between mass and weight?
A. Weight is mass divided by gravity
B. Mass and weight are the same
C. Weight depends on gravity while mass is constant
D. Mass changes with location, but weight does not
39. The mass of an object is 10 kg.

What is its weight on Earth? (g = 10 m/s²)

A. 1 N
B. 10 N
C. 100 N
D. 1000 N

40. Which of the following is a vector quantity?

A. Speed
B. Distance
C. Velocity
D. Time

41. Which of these is not a physicist

A. Albert Einstein
B. Sir Isaac Newton
C. Adams smith
D. Michael Faraday

42. Which of the following factor can reduce friction between two surfaces?

A. increasing surface roughness
B. applying lubricant
C.increasing temperature
D. decreasing surface area

43. An object accelerates from rest to 20 m/s in 10 seconds. Its acceleration is:

A. 0.5 m/s²
B. 2 m/s²
C. 10 m/s²
D. 20 m/s²

44.A solid has a mass of 10 kg and a volume of 2 m³. Its density is:

A. 5 kg/m³
B. 10 kg/m³
C. 20 kg/m³
D. 50 kg/m³

45.If a car accelerates uniformly from rest to 20 m/s in 5 seconds, its acceleration is:

A. 2 m/s²
B. 4 m/s²
C. 5 m/s²
D. 10 m/s²

46. The law of floatation states that an object will float if its:

A. Weight is equal to the upthrust
B. Mass is greater than the upthrust
C. Density is greater than the fluid
D. Volume is less than the fluid

47The SI unit of pressure is the:

A. Pascal
B. Newton
C. Joule
D. Watt

48. Which of the following is true about a highly viscous liquid?

A. It flows quickly
B. It flows slowly
C. It has no resistance to flow
D. It is lighter than air

49.Which of the following liquids has a high viscosity?

A. Water
B. Honey
C. Milk
D. Petrol

50. A car moves with a speed of 30m/s. Calculate the distance travelled in 30s.

A. 900m
B 1000m
C. 950m
D. 120m

SECTION B. (40 Marks)

Answer question one (1)and any other four (4) questions from all

1. Does a fractional force between two surfaces in contact depend on the nature of the surfaces? Give an illustration to support your answer (5marks)

b. State any three laws of solids friction (3marks)

2.(WAEC/SSCE June 2014)

The diagram above illustrates a body of mass 5.0 kg being pulled by a horizontal force F. If the body accelerates at 2.0 ms^{-2} and experiences a frictional force of 5 N, calculate the:

(i) net force on it
(ii) magnitude of F
(iii) coefficient of kinetic friction
[g = 10 ms^{-2}] (5marks)

2b.Define friction

i. List three advantages of friction
ii. List three disadvantages of friction
iii. List 3 methods of reducing friction (WAEC,2006) (3marks)

3a. What is the difference between distance and displacement? (1mark)

i Define speed ii What does the slope of distance time graph measure? (2marks)

ivWhat do we measure with displacement-time graph? [JAMB 1994] 1 mark

3b.A train travelling with a uniform speed of 10 ms^{-1} accelerates to 20 ms^{-1} in 5s. If it maintains this speed for 5s before being brought to rest in another 5s, calculate the

i. acceleration
ii. the total distance covered
(4marks)

4. A car starts from rest and accelerates uniformly until it reaches a velocity of 30 m/s after 5s. It travels with uniform velocity for 15s and is then brought to rest in 10s. Represent this graphically and determine the

i. acceleration of the car
ii. retardation
iii. displacement after 5s
iv. total displacement .(8marks)

5. Given $M^xL^yT^z$ is the dimension of pressure, what are the values of x, y and z? (2marks)

b.Use dimension analysis to prove if the formula K.E = $\frac{1}{2}mv^2$ is correct (3marks)

c.An object of weight 150 N moves with a speed of 4.5 m/s in a circular Path of radius 3 m. Calculate its centripetal acceleration and the magnitude of the centripetal force. [Take g = 10 m/s^2](3marks)

6. Differentiate between centripetal & centrifugal force.(2marks)

b. A body weighing 100N with a speed of $5ms^{-1}$ in a horizontal circular path of radius 5m. Calculate the magnitude of the centripetal force acting on the body (g= $10ms^{-2}$). (WAEC, 1999) (2marks)

c. List two examples each of substance with :

i. Low viscosity

ii. High viscosity (2marks)

d. When is a liquid said to be viscostatic? (1mark)

e. Define pressure(1mark)

7. State Archimedes' principle (2marks)

b. The mass of a specific gravity bottle is 15.2g when it is empty. It is 24.8 g when filled with kerosene and 27.2 g when filled with distilled water. Calculate the relative density of kerosene. [WAEC/SSCE, June 2011] (2marks)

c. A metal rod of density 7000 kgm^{-3} and cross-sectional area of 0.001257 m^2 has a mass of 1.76 kg. Calculate its length (2marks)

d. What is terminal velocity? (2marks)

8. Explain upthrust(2marks)

b. Explain how to determine the relative density of a liquid using Archimedes' principle (2marks)

c .A force, 10N drags a mass 10kg on a horizontal table with an acceleration of $0.2ms^{-2}$.If the acceleration due to gravity is $10ms^{-2}$.Calculate the coefficient of friction between the moving mass and the table. (UME,1998) (2marks)

d.Explain why a ship made of steel denser than water floats on water.(2marks)