The Ambassadors College, Ota

S.S.S 1

SECOND TERM

HOLIDAY ASSIGNMENT

2023/2024 Academic Session

Name: _____

HOLIDAY ASSIGNMENT
PHYSICS

1a. Explain the term

    i. uniform acceleration   ii. average speed

b. A body of rest is given an initial uniform acceleration of 8.0ms^{-2} for 30s after which the acceleration is reduced to 5.0ms^{-2} for the next 20s. the body maintains the speed attained for 60s after which it is brought to rest in 20s.

    I. Draw the velocity time graph of the motion using the information given above.

    II. Using the graph, calculate the;

        i. Maximum speed attained during the motion

        ii. Average retardation as the body is being brought to rest

        iii. Total distance travelled during the first 50s.

        iv. Average speed during the same interval as in (iii)

2a. Define the following terms

    i. Mechanical advantage   ii. velocity ratio

    iii. efficiency as applied to a machine

b. A screw jack whose pitch is 2mm is used to raise a motor car of mass 900kg through a height of 20cm. The length of the tommy bar of the jack is 40cm. if the jack is 60% efficient, calculate the;

    i. velocity   ii. mechanical advantage of the jack

    iii. effort requires   iv. Work done by the effort (g=10ms^{-2})

3a. Steel bars each of length 3m at 29^{0}c are to be used for constructing a rail line. If the linear expansivity of steel is $1.0 \times 10^{-5}k^{-1}$, calculate the safety gap that most be left between successive bars if the highest temperature expected is 41^{0}c

b. An iron rod is 1.58m long at 0^{0}c. what must be the length of a brass rod at 0^{0}c. if the difference between the lengths of the two rods is to remain the same at all temperatures.

Linear expansivity of iron = $1.2 \times 10^{-5}k^{-1}$

Linear expansivity of brass = $1.9 \times 10^{-5}k^{-1}$

CIVIC EDUCATION

1. Extensively explain the following:

    i.   National unity   ii.   National integrity

    iii.   National consciousness   iv.   Nationalism

2. Discuss atleast four factors/skills necessary for the preservation and promotion of our believes, values and customs in Nigeria.

PHYSICS (HONOURS)

1(a). (i). What is simple harmonic motion?

    (ii). Give **three** examples of simple harmonic motion.

(b). Differentiate mechanical oscillator and electrical oscillator

(c). The displacement of a simple mechanical oscillator is given as; $Y = 4.2\sin100\pi t$, where y is in cm, t is in second. Determine the

    (i). velocity equation of the oscillator

    (ii). acceleration equation of the oscillator

    (iii). maximum displacement

    (iv). frequency and the period of oscillator

    (v). maximum velocity at the middle and at the extremes

    (vi). maximum acceleration at the middle and at the extremes

(d). Sketch the graph of energy interchange between the potential energy and kinetic energy in an energy – displacement graph.

2(a). (i). What is Pressure?

    (ii). Give **four** characteristics of pressure

    (iii). State categorically the devices used to measure the following

Measurable Pressure quantities	Specific device
Atmospheric pressure	
Gas pressure	
Blood pressure	
Pressure at the mountain-top	

(b). (i). State the Pascal Principle of transmission of Pressure

(ii). Mention **five** devices that works on this principle.

(iii). Explain the working principle of Syphon.

(c) (i). Show that the Pressure, P at the surface of a liquid of density, ρ at a depth of , h is P = ρhg. Where g is acceleration due to gravity

(ii). The horizontal door of a submarine at a depth of 400 m has an area of 0.5 m^2. Given that; Relative density of sea water = 1.03, Atmospheric pressure = 1.01 x 10^5 Nm^{-2}; Density of pure water = $1000kgm^{-3}$; g = $10ms^{-2}$. Calculate ;

(i). density of the sea water

(ii). Pressure at the surface of the sea water

(iii). Total pressure at the surface of the sea water

(iv). The force exerted by the sea water on the door at this depth.

GOVERNMENT

1a. Define Franchise

b. Briefly trace the development of franchise

2. Explain each of the following electoral system.

i. simple plurality system ii. the repeated ballot

iii. the second ballot iv. The alternative vote

CHRISTIAN RELIGIOUS KNOWLEDGE

1. What is partiality?

2. State five ways partiality can be checked in our society.

3. Mention three advantages of impartiality.

BIOLOGY

1. State FOUR differences between colonial and filamentous organisms.

2. State FOUR reasons for conserving natural resources.

3. State TWO ways of preventing water pollution

CHEMISTRY

1(a). Define an acid. Give the natural sources of the following organic acids.

(i) Lactic acid   (ii) Ascorbic acid   (iii) Amino acid

(b). Give the definition of a base and an alkali.

2(a). Define a salt. Potash alum is a double salt. Explain this statement using the chemical formula of the alum.

(b). Explain and give an example each of:

(i) Hygroscopic substance   (ii) Efflorescent substance

(iii) Deliquescent substance.

3. Calculate the number of moles of gas present in 200 cm^3 of a gas at 25°C and 202 Kpa.

ENGLISH LANGUAGE

Look up the following words from the dictionary and write down the meaning, transcription, sentence example, part of speech, synonyms, antonyms and idiomatic expression associated with them (if any).

i. refute
ii. rebate
iii. intelligible
iv. legible
v. eligible
vi. meander
vii. trickle
viii. Forgo
ix. forfeit
x. refuse

ECONOMICS

1a. What is Public Corporation.

b. Define Co-operative Society.

2a. Define the channel of distribution?

b. List and explain FIVE reasons for the elimination of middlemen in the channel of distribution.

HOLIDAY ASSIGNMENT

COMMERCE

1.   Explain the following services provided by the NIPOST

    i.   Business Reply Services   ii.   Express Delivery

    iii.   Poste Restante   iv.   Recorded Delivery

2.   Explain FIVE ways money as solved the problem of trade by barter in the economy.

FINANCIAL ACCOUNTING

1.   Distinguish between the following.

    i.   Residual value and Obsolescence.

    ii.   Depreciation and Amortisation

    iii.   Current Assets and Non-current Assets

    iv.   Drawings and Contra Entry

    v.   Gross Profit and Net Profit

2.   Fill the boxes with the correct classification of Accounts

Personal account, impersonal account, debtors account, creditors account, capital account, bank account, real account, nominal account, building, motor van, furniture, stock, revenue/income account, expenses account, intangible assets account, sales, discount received, salaries and wages, transport, depreciation, repairs, goodwill, patents, copy right, franchise, printing, rent and rates.