
Camperdown High School fifth-formers get ready to see if they have what it takes to be a Pulse model.

Revision

HYACINTH TUGMAN
Contributor

AS YOU do your final preparation before your examinations I will share some questions with you and ask that you read, and practise as much as possible.

1. Communication is the transmission of information to another person, hence a sender and a recipient of the message.
(a) State four reasons for good communication in a business.
(b) List three methods of communication.
(c) Use the table to complete the characteristics of good communication.

Characteristics	How to Communicate
Influential Factors	
Clarity	
Accuracy	
Effectiveness	
Completeness	
Specific	

2. Assume that you are Ilene Douglas of 10 Mona Road, Kingston 10. Write a letter of application in response to the following advertisement that appeared in **The Gleaner**, Sunday, April 15, 2018.

VACANCY

Applications are invited from suitably qualified persons to fill the position

OFFICE CLERK
At

WHIMS INTERNATIONAL

Applicants must have:

General Education - at least 5 CXC - CSEC subjects including Office Administration and Information Technology

A good command of the English Language

Applications with proof of qualifications and two references should be sent no later than **May 01, 2018** to:

The Human Resource Manager,
Whims International,
17 Holbourne Road,
New Kingston

3. (a) Name six qualities that would make an applicant suitable for the position of receptionist.
(b) List the items of information that are entered on a personal record sheet for use in the human resource office and why they should be kept confidential.

(c) How would you, as a receptionist:
(i) Carry out your duties when dealing with visitors to your company?
(ii) Create a good impression of your company?

4. (a) Name FOUR characteristics of a good filing system.
(b) What do the following terms mean?
(i) Retention (ii) Microfilming (iii) Chronological order.

(c) Place the following in alphabetical order:
Kirk L Harry, Mrs Yvonne Burke
Dr Neville Jones, C. D. Payne & Co Ltd
The Bridgeview Country Club,
Sir Paul Thompson.

5.

What is meant by the following terms – standing order, credit card, money order, bank drafts, direct debits, travellers' cheques.

6. (a) What are some services offered by the travel agencies?
(b) Give THREE reasons for preparing a travel folder when making travel arrangements.

7. As the secretary of your organisation, you are required to do the preparation for the next annual general meeting.

Make a checklist of things to be done:
(a) Before the meeting.
(b) On the day of the meeting.
(c) After the meeting.
(d) Write a 'Notice of a meeting' for this meeting.

8. (a) List THREE duties of a clerk in the purchasing department.
(b) Give the names of the documents used in the purchasing department and give the sequential order in which they are used.

Have a wonderful week and remember to STUDY, STUDY. God bless you.

*Hyacinth Tugman is an independent contributor. Send questions and comments to **kerry-ann.hepburn@gleanerjm.com***

International trade and balance of payments

YVONNE HARVEY
Contributor

HELLO AGAIN. This is the penultimate lesson on social accounting and global trade. It consists of international trade and a portion of balance of payments.

INTERNATIONAL TRADE

When countries buy goods and services from each other, and/or sell goods and services to each other, this is referred to as international trade. International trade is thus trade among countries.

International trade is the largest scale in the development of division of labour and specialisation, wherein countries specialise in the goods and services that they can produce best and at the lowest cost, then trade with other countries to get the goods and services that they do not specialise in. You may ask: Why did international trade develop? Let us consider the reasons for international trade.

REASONS FOR INTERNATIONAL TRADE

1. **Climate and soil type differences.** Not all countries have the same climate and soil conditions. Different crops will grow where the climate and soil type differ.
2. **Natural resources.** These can only be mined where they are found, e.g., bauxite. Some countries are rich in mineral resources; others have little or none at all.
3. **Special skills of the labour force.** The type of labour determines what is produced. For example, France produces fashions (clothes), cologne and various types of cheese because the labour force has special skills and aptitude in these areas.
4. **Lack of quantity and quality of local goods.** Very often, countries import goods and services because what they produce locally is not enough for local needs and/or because the quality falls short of what is desirable.
5. **Increased transportation and communication.** These have made trading on a worldwide scale much easier.
6. **Access to a wider variety of goods and services.** Wider variety pleases consumers and results in an increase in their standard of living. The same is true for countries.
7. **Foreign exchange.** This is gained from exports and is used to pay for imports.
8. **World output increases.** This allows the problem of scarcity to be reduced.
9. **Cheaper goods and services.** Countries may import goods and services because they are cheaper than goods and services sold locally.

BALANCE OF PAYMENTS

International trade refers to trade among different countries of the world. When countries trade with each other, a record is kept of the financial transactions between them. This record is known as the balance of payments. It is a statement of the trade which takes place between a country's residents (individuals, businesses and the government) and the residents of all foreign countries. Therefore, Jamaica's balance of payments shows all the payments we receive from other countries and all payments which we make to them.

There are three components of the balance of payments account:

- The current account
- The capital account
- The official financing account

We are going to analyse each account in turn. Please note that in all parts of the balance of payments account, exports and income are given a plus (+) sign, and imports and payments are given a minus (-) sign.

THE CURRENT ACCOUNT

This section of the balance of payments is divided into two parts:

- The visible trade account
- The invisible trade account

The visible trade account records the tangible items, i.e., the imports and exports of goods only. The difference between the money value of goods imported and goods exported is known as the visible trade balance or the balance of trade. This balance may be a plus (+) surplus or a minus (-) deficit. If exports exceed imports, the result will be a surplus or a favourable balance of trade. On the other hand, if imports exceed exports, there will be a deficit or unfavourable balance of trade.

The invisible trade account records the intangible items, i.e., the imports and exports of services, tourist expenditure and income, income from investments abroad and paid to investments abroad. The services include shipping, aviation and financial services. The balance on this account is known as the invisible balance and it will be a plus (+) favourable if exports (income) of the intangible items exceed the imports. Now you can work out for yourselves what will result in a minus (-) on this account.

The overall current account balance is the difference between our exports of goods and services and the imports of goods and services. As with the visible and invisible balances, the overall current balance may be favourable or unfavourable.

THE CAPITAL ACCOUNT

This account records capital flow, i.e., loans and grants to and from other countries, investments bought and sold. (Note that the income from investments is recorded in the invisibles of the current account.) As with the current account balance, the capital account balance may be favourable or unfavourable.

Now we need to consider the overall balance of payments figure. This takes into account the current account balance and the capital account balance. If, overall, the exports exceed the imports, the overall balance of payments will be a surplus (+) and if, overall, the imports exceed the exports, the overall balance will be a deficit (-). This means that the country spent more than it earned.

Next week, I will continue with the balance of payments and give you some questions on the topic. Keep safe until then.

Yvonne Harvey is an independent contributor. Send questions and comments to ***kerry-ann.hepburn@gleanerjm.com***

Trial balance, errors and suspense account

ROXANNE WRIGHT
Contributor

BELOW IS a question I ask that you attempt to answer on your own, under examination condition. You should work within no more than 35 minutes to come up with your answer. I will present the solution; be sure to match the answer with mine.

QUESTION

Vincent Levy drew up a trial balance from the following list of balances on Sept 30, 2016:

	$
Equipment	28000
Debtors	24600
Creditors	11480
Sales	242800
Purchases	186800
Cash at Bank	8 400
Stock	21 600
Sundry Expenses	16 220
Capital	62 800
Drawings	32 400

As the trial balance did not agree, a suspense account [>1] was opened for the amount of the difference.

After investigation, the following errors were discovered:

1. The purchases day book was under-added by $800. [>2]
2. Goods costing $1,400 bought from Sam were credited to the account of Sammy. [>3]
3. An item of $480 was debited twice in the sundry expense account. [>4]
4. A purchase from Smutty was correctly entered in the purchases day book as $$860 but wrongly entered in Smutty's account as $680. [>5]
5. The debtors total of $24,800 [>6] was wrongly listed as $24,600.
6. Goods worth $560 taken for own use by Levy were debited to his drawings account, but no credit entry was made in any other account. [>7]
7. A banker's standing order for $360 for payment to Levy's insurance was entered on the wrong side of the bank account. [>8]

After the necessary amendments were made, the suspense account was brought to a nil balance.

You are required to:

a. Write up the suspense account, including your calculation of the opening balance.

b. Prepare the trial balance as it will appear after the corrections have been made.

REASONING

[>1]	See working1	
[>2]	Purchases Account Suspense Account	Dr. $800 Cr. $800
[>3]	Sammy Account Sam Account	Dr. $1400 Cr. $1400
[>4]	Suspense Account Sundry Expense Account	Dr. $480 Cr. $ 480
[>5]	Suspense Account Smutty Account	Dr. $180 Cr. $180
[>6]	Sundry Debtors Account Suspense Account	Dr. $200 Cr. $200
[>7]	Suspense Account Purchases Account	Dr. $560 Cr. $560
[>8]	Suspense Account Bank Account	Dr. $720 Cr. $720

WORKING

[w1] Trial balance (before corrections) at September 30, 2016

No.	Name of account	Dr. $	Cr. $
1.	Equipment	28000	
2.	Debtors	24 600	
3.	Creditors		11480
4.	Sales		242800
5.	Purchases	186800	
6.	Cash at Bank	8200	
7.	Stock	21600	
8.	Sundry expense	16220	
9.	Capital		62800
10.	Drawings	32400	
	Difference in Trial Balance		940
		318020	318020

SOLUTION

a. Books of Vincent Levy suspense account

	$		$
Sundry Expense Account	480	Difference in Trial Balance [w1]	940
Smutty Account	180	Purchases Day Book under added	800
Purchases – Omission	560	Debtors totaled less	200
Bank – entry in Wrong side adjusted	720		
	1940		1940

b. Trial balance (after correction) at September 30, 2016

S. No.	Name of account	Debit $	Credit $
	Equipment	28000	
1.	Debtors	24800	
2.	Creditors		11480
3.	Sales		242800
4.	Purchases	187040	
5.	Cash at Bank	7680	
6.	Stock	21600	
7.	Sundry Expenses	15740	
8.	Capital		62800
9.	Drawings	32400	
10.	Sammy Account	1400	
11.	Sam account		1400
12.	Smutty Account		180
		318660	318660

Do you remember:

i. The purpose for preparing a trial balance?

ii. Three different types of errors which a trial balance will NOT reveal?

iii. Three errors of bookkeeping which could cause the trial balance to disagree?

Here is the reminder:

The purpose of preparing a trial balance:

The purpose of extracting a trial balance at the end of the accounting period of the business is to check the arithmetic accuracy of the entries made in the ledger.

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Soaps and detergents

FRANCINE TAYLOR-CAMPBELL
Contributor

SOAPS ARE made by the process of saponification, where animal fat or plant oils are reacted with an alkali such as sodium hydroxide. Soaps are, therefore, the alkali metal (Na, K or Li) salts of fatty acids.

The oil or fat would represent the ester formed from the combination of glycerol with a fatty acid. When sodium hydroxide is added, the ester is hydrolysed to form glycerol, and the sodium ion replaces the hydrogen on the acid to form the sodium salt (a soap). If potassium hydroxide is used as the alkali, then a potassium salt (soap) would be formed.

E.g., Fat/Oil (Ester) + sodium hydroxide ⟶ glycerol + sodium stearate (soap)

The process where the ester is broken down to form soap is similar to the hydrolysis reaction of esters.

$$\begin{array}{l} CH_3(CH_2)_{16}COOCH_2 \\ \quad\quad\quad\quad\quad\quad | \\ CH_3(CH_2)_{16}COOCH \\ \quad\quad\quad\quad\quad\quad | \\ CH_3(CH_2)_{16}COOCH_2 \end{array} + 3NaOH \longrightarrow 3CH_3(CH_2)_{16}COONa + \begin{array}{c} CH_2OH \\ | \\ CHOH \\ | \\ CH_2OH \end{array}$$

a typical fat or oil — a typical sodium salt found in soap — glycerol

Soapless detergents, on the other hand, are made from petroleum products treated with concentrated sulphuric acid. Here, crude oil is used instead of animal fats and vegetable oils.

HOW DO THE CLEANSING ACTION OF SOAP AND DETERGENTS DIFFER?

Soaps are not suitable for washing with hard water. Hard water contains dissolved ions (minerals) such as Ca2+ and Mg2+ which replace the sodium ion (Na+) in the soap molecule. This results in a precipitate called scum, which is insoluble and floats on the water surface. Using soap with hard water therefore reduces the cleansing action of the soap and results in loss, as more soap is needed to carry out the task. The presence of scum is also unsightly, as it sticks to clothes.

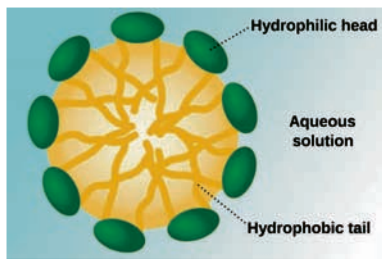
Detergents can clean effectively even in acidic mediums, as they are made from the salts of strong acids (e.g., sulphuric acid). They are more soluble in water and have a stronger cleansing action. Unlike soap, less detergent would be needed as it is not being used up to form scum. The use of detergents would also result in conserving natural vegetable oils and animal fats, which can serve other purposes.

WHAT ARE THE ENVIRONMENTAL IMPLICATIONS OF USING SOAPS AND DETERGENTS?

Soaps are usually biodegradable since they are made from plant or animal products, while soapless detergents are non-biodegradable products that can end up harming the environment. The phosphate levels in some of these detergents lead to pollution of water bodies as a result of nutrient enrichment. Nowadays, some detergents are made 'phosphate-free', which lessens their impact on waterways. Unfortunately, the fact that detergents are made from petroleum products will only serve to deplete these non-renewable resources.

HOW DO SOAPS/ DETERGENTS WORK?

The soap molecule has two ends: a head and a tail.



The polar part of the soap is hydrophilic (water-loving) and interacts with water, while the non-polar part is hydrophobic (water-hating) and interacts with the oil and grease. By this action, the oil is separated by the cleansing action of the soap.

Francine Taylor-Campbell is an independent contributor. Send questions and comments to kerry-ann.hepburn@gleanerjm.com

Cells

MONACIA WILLIAMS
Contributor

"The cells of your body are like a trillion light bulbs. When you relax, purify and connect to a source, you are a powerhouse of Light."

– Diane Cooper

HOW ARE you this week? Was the last week an enjoyable one for you? I hope it was, and I hope that this one will be even better! Have you been keeping up with your work? Remember, do not allow it to pile up on you! Allowing that to happen is a recipe for failure!

This week we begin a new study and this one is on cells. What are they? What makes them up? Are they all the same?

WHAT ARE THEY?

Cells are the small units that are brought together to make up organisms. Have you ever seen a house being built? If you were to look at a house that has been completed and painted, you would not be able to guess how it was constructed. You would not know that it started with one block to which others were continually added until the frame was complete; that is how it is with the organism. Most organisms, plant and animal, begin with one cell which divides and produces embryonic stem cells.

These embryonic stem cells replicate (form copies) quickly and can differentiate to form tissues. The tissues then group together to form organs, and the organs work together to form organ systems which comprise the organism. So, the cell is the basic unit or 'building block' of the organism.

These cells cannot be seen with the naked eye; microscopes must be used to view them. What are microscopes, you ask? These are pieces of scientific equipment that are used to examine objects that cannot be seen with the naked eye. There are two types of microscopes that can be used: the light microscope and the electron microscope. The electron microscope is more powerful than the light microscope and can magnify objects up to 500,000 times. It gives a much more detailed view of the object; using it to view the cell shows that the cell contains other smaller structures which are called organelles.

Below are diagrams of a generalized plant cell (Figure 1) and a generalized animal cell (Figure 2), as well as electron micrographs of the cells (Figure 3) as they appear under the electron microscope. By the way, some organisms are made up of just one cell; because of this, they are known as unicellular organisms. An example of a unicellular organism is the amoeba (Figure 4).

ARE ALL CELLS THE SAME?

Note that the cells in Figures 1 and 2 are generalized cells; not all the cells of the organism are like these. In plants, some cells become specialized for absorption, e.g., root hair cell for transport, xylem and phloem cells for photosynthesis, palisade mesophyll, and for gaseous exchange, guard cells. In animals, cells become specialised for nervous conduction; nerve cells/neuron for movement; muscle cells for transport; blood cells for gaseous exchange, alveoli. When an embryonic cell develops to become a specialized cell, it is said to differentiate. These cells are known as eukaryotic cells because they have distinct, well-developed nuclei.

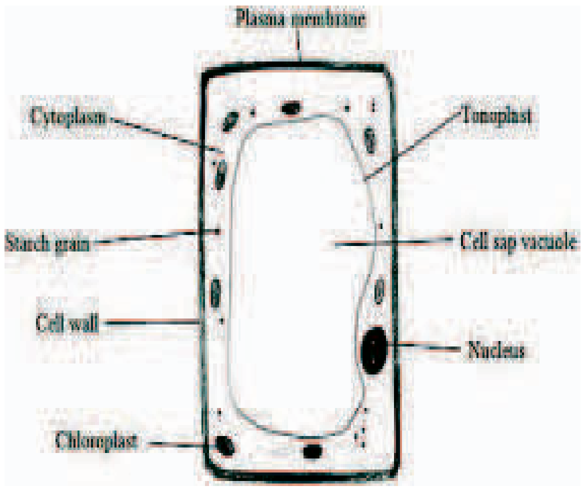
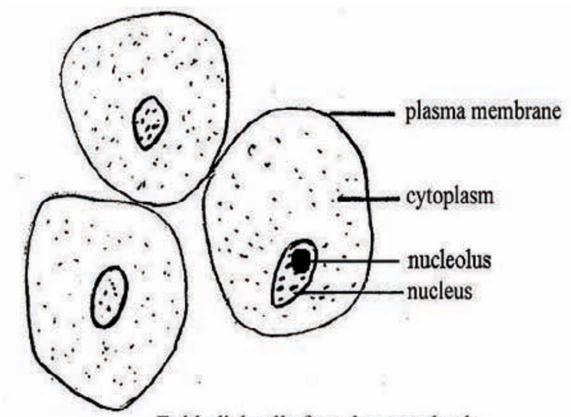


Figure 1



Epithelial cells from human cheek.

Figure 2

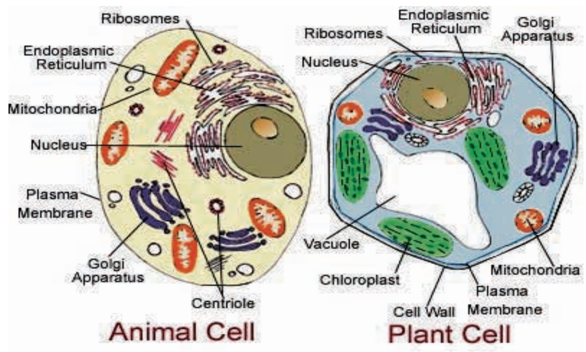
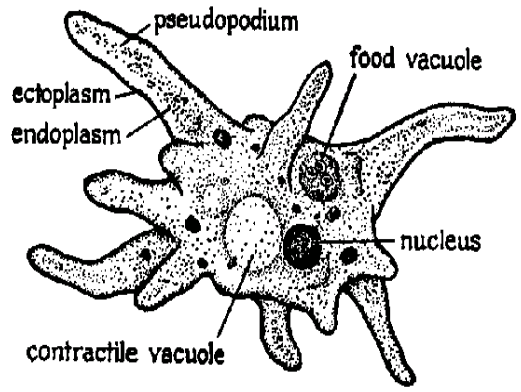


Figure 2



Structure of *Amoeba* (Class SARCODINA).

Figure 3

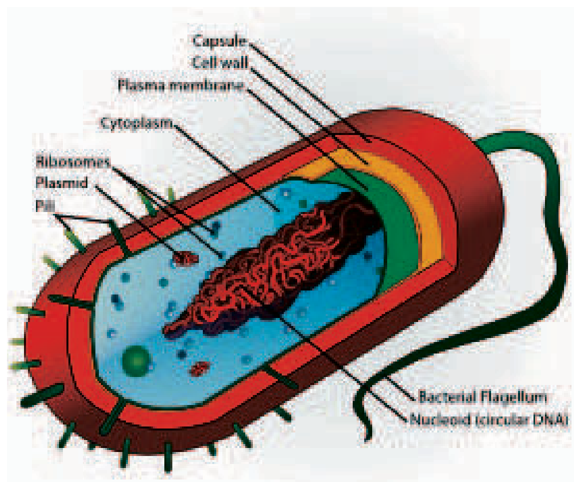


Figure 4

Look at the diagrams. You will see that all have common structures and that there are structures that are found only in each type of cell. Next week, we will look at these as we continue our study. See you then!

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River deposition

THE THREE river processes identified are erosion, transportation and deposition. In lessons prior to this, I shared information on the processes of river erosion and transportation. Today, I will go on to the third river process, that of river deposition. Deposition is defined as the progressive laying down of material by the river and is complementary to erosion. Material removed from one place is transported and deposited at another place.

Rivers will transport their load as long as they have the energy to do so. If the river loses its energy, there will be deposition of the load on the riverbed. When I shared with you the information on river transportation, I mentioned two terms, namely, competence – a measure of a river's ability to carry load; and capacity – the ability of the river to carry a certain amount of materials; in other words, the total load that the river can carry. In essence, both are decreased, resulting in the river dropping its load.

Some of the causes of such decreases are:
(a) reduction in stream gradient
(b) decrease in volume
(c) loss of velocity
(d) overloading
(e) freezing, and
(f) emptying into quiet or slower-moving bodies of water.

The order in which the materials are deposited is – boulders, pebbles, gravels, sands, silts, and muds, although the change from coarse to fine material is normally imperceptible. The heavier materials are deposited usually at the upper course of the river. Finer particles travel greater distances downstream before deposition occurs. Deposition is not confined to the lower courses of rivers. Much deposition does occur there, but some may occur at almost any point along the river's course, such as on the inside bend of the river meander, on a floodplain, or at the river mouth.

As you revise this topic of river processes, include the different physical features that are formed as a result of river erosion and river deposition. You must be able to describe their formations, draw and label diagrams of them, and give examples where they can be found.

Let us now turn our attention to wave processes, to complete the specific objective 11 which states that students should be able to 'describe river and wave processes'. One of the three movements associated with seawater is waves. Waves are produced by the friction of wind on open water. Essentially an up-and-down movement of the water, wave motion also moves the surface water in the direction that the wind is blowing. Breakers are formed when the wave comes into shallow water near the shore. The lower part of the wave is retarded by the ocean bottom, while the top, having greater momentum, is hurled forward, causing the wave to break.

Waves are the most powerful agents of marine erosion. As they attack the shore, they erode it by a combination of several processes, namely, corrasion, hydraulic action, solution and attrition, processes that are similar to those which occur in river erosion. Each of these will be discussed below.

■ Corrasion is also called abrasion. Corrasion involves the rock fragments being carried by the waves towards the coast. The erosive work of waves, like that of running water, will clearly be greater when they are provided with cutting tools. Waves, armed with rock fragments of all sizes and shape, are able to undertake their erosive work much more quickly and effectively. These rock fragments can be as huge as boulders. The energy of the waves determines the size that they can carry.

■ Hydraulic action – The force of waves, as they batter against cliffs and seawalls, exert considerable pressure upon the coast. In their forward surge, waves splashing against the coast may enter joints and crevices in the rocks. The air imprisoned inside is immediately compressed. When the waves retreat, the compressed air expands with explosive violence. Such action, repeated again and again, soon enlarges the cracks and rock fragments are prised apart.

Information on the other processes will be shared in the next lesson.

Here is a study tip: 'Study for tests together, ask questions and teach each other.'

REFERENCES

CSEC New Integrated Geography – Sheldon G. Bleasdell
Certificate Physical and Human Geography – Goh Cheng Leong
Geology Made Simple – William H. Matthews
Geography for CSEC – Jeanette Ottley, *et al*
Morphology and Landscape – Harry Robinson

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Caribbean unity a must

MAUREEN CAMPBELL
Contributor

OBJECTIVES

1. Outline the factors that promote regional integration.
2. Analyse the benefits of regional integration.
3. Describe the factors that hinder regional integration.

"The Caribbean has tremendous economic potential and growth opportunities," said Tahseen Sayed, World Bank Country Director for the Caribbean. EWashington, March 30, 2017.

THE CARICOM FLAG SYMBOLISING UNITY

The blue represents the sky and the lower part of the dark blue represents the Caribbean Sea. The yellow circle in the centre of the standard represents the sun, on which is printed, in black, the logo of the Caribbean Community – two interlocking Cs. The two Cs are in the form of broken links in a chain, symbolising unity. The narrow ring of green around the sun represents the vegetation of the region.

Answer the following question.

■ Can Caribbean countries work together effectively? Give reasons for your answer.

The journey towards regional integration within the Caribbean has been long. Progress has been made, but there are still challenges which are preventing integration within the region from being optimally effective. The major challenge towards the integration movement is not just the wide disparity in levels of development among member states, but a mixture of the desire for political power and a tendency towards insular pride and economic recognition. Until it is realised that integration requires not insularity on political, economic and social front, but a sense of one Caribbean identity, regional development may never fully be achieved.

FACTORS PROMOTING REGIONAL INTEGRATION

Factors that promote regional integration may be looked upon as both domestic and external aspects that affect the region; chief among them are globalisation and trade liberalization.

(a) There is a common history and cultural heritage, especially as colonies of European powers – chiefly Britain.

(b) Caribbean countries share common economic and social issues.

(c) These countries are also affected by the effects of globalisation, trade liberalization and trading blocs.

(d) The region is vulnerable to economic shocks and natural disasters.

(e) Human resources that are underdeveloped – as a group, they are able to financially support facilities to enhance and develop education and skills development in the region.

(f) Cooperation by working together as a region will help to overcome the challenges of having a small population and economy. This is so as cooperation and integration, particularly in trade, will produce a larger regional market.

BENEFITS OF REGIONAL INTEGRATION

"There is strength in unity." The Caribbean must take this literally if we are to promote and benefit from regional integration.

a) It will increase necessary cooperation among island states as we venture more into the 21st century.

b) As a group, they will be better able to negotiate among the world's most powerful nations.

c) Integration will further help them to compete internationally as a united group. Regional collaboration and integration will also help overcome the limitations and vulnerabilities inherent in the relatively small size of individual economies.

d) This venture will also help them to reduce the negative effects that are presumed to be associated with issues such as globalisation. It should, therefore, help us to be better able to respond to economic implications of globalisation and trade liberalisation.

e) There will be an improvement in the quality of life of the population as a result of access to a variety of goods and services.

f) Each individual island will have many more persons to sell its goods to, apart from those within its own immediate borders.

g) The development of various groups, institutions and organisations that will respond to the needs of each island.

h) It will promote the freedom of travel among islands and the ability to find work, which should decrease unemployment and underemployment.

i) Most of all, it should see the improvement in the quality of life and the reduction in the inequality of wealth distribution.

j) The improved levels of international competitiveness of the region will, undoubtedly, see the expansion of trade on the world market.

k) There should be strength in unity as the increased co-operation among member states will make us more world renown.

BARRIERS TO REGIONAL INTEGRATION

The barriers, problems, challenges are many, far-reaching and intertwined; the Caribbean, in its endeavour to promote growth through regional integration, faces an uphill task in many instances. Why is this so?

1. The islands are all at different stages of development, which does not promote a willingness to actively work together.
2. No two islands in the Caribbean follow the same economic policies.
3. Patriotism to island homes stir conflict between territorial and regional demands.
4. Except for countries in the Organisation of Eastern Caribbean States, islands do not have the same currency.
5. Islands in the Caribbean do not have the same type and amount of resources.
6. The islands are scattered all over the Caribbean.
7. Many countries are all producing the same goods for trade.
8. There is conflict over how much is to be contributed by each country.
9. There are problems with multinational cooperations and how they should be dealt with in the region.
10. The geography of the region – islands, though in proximity, are scattered all over the region.
11. In the region, there is an absence of a common model or strategy for development. Each country tends to follow its own policy.
12. There are differences in stages of growth and development; some countries are referred to as 'developed', some as 'developing', and some as 'underdeveloped' in the region.
13. There is competition for location of industries, as each territory needs investments to promote job opportunities for its population.

CHALLENGES FACING THE CARIBBEAN REGION THAT MUST BE OVERCOME NOW

Challenges are never easy to overcome. In an economic, problematic world, where First-World countries are facing grave problems, the Caribbean must draw even closer. It is so easy to suggest what must be done; the greatest problem lies in how to carry out these suggestions to solve them.

1. Each individual island does not have enough persons that it can sell to within its borders (a large market).
2. There is a lack of diversification of resources; islands in the Caribbean do not necessarily produce a variety of goods (diversification in production).
3. In many Caribbean islands, there is a high unemployment problem (job creation by setting up industries collectively).
4. Many islands also do not produce enough goods to sell in order to make profits (increased production and investment).
5. The Caribbean is vulnerable to natural disasters (aid and information).
6. Capital for improvement and investment is lacking in the Caribbean region, so there is very little to develop industries (capital accumulation).

CONTINUED ON PAGE 24

Movements towards independence and regional integration

DEBBION HYMAN
Contributor

EVEN THOUGH the idea of federation had been a good one in principle, it was plagued with many problems. The federal system collapsed/dissolved in 1962 and listed below are the reasons why it did.

REASONS FEDERATION COLLAPSED

(1) CONSTITUTIONAL ARGUMENTS

The federation, as structured in 1958, was less advanced politically than Jamaica and Trinidad. Both countries, by 1960, had full internal self-government. This meant they had control of most areas of government except finance, foreign policy and security. Thus, federation was not affording them any improvements, as these they already had.

(2) FEARS OF JAMAICA AND TRINIDAD

Jamaica and Trinidad held 77 per cent of the population of the federation, 83 per cent of the land, and 75 per cent of the wealth of the federation. They contributed 82 per cent of the levy, yet, because the smaller territories supported the WIFLP and other representatives dominated the ministerial seats in the federal cabinet, Jamaica and Trinidad feared:

(i) as 'haves', their economies would be taxed to subsidize the 'have-nots'

(ii) that their populations would be swamped by immigrants from the 'have-not' members.

(3) REVENUE AND FUNDING

The original levy of £2 million/$9 million per annum was inadequate. Of the total, Jamaica contributed 43 per cent, Trinidad 39 per cent, and the others 18 per cent. The larger territories saw this as unfair – why should they be forced to carry the bulk of the levy?

(4) THE ISSUE OVER CHAGUARAMAS

The site of the federal capital was disputed by Jamaica, particularly, as it was still, in 1958, a United States (US) military base. In 1961, Trinidad negotiated with the US for a continuation of the lease. Grantley Adams of Barbados was upset with this as he felt that the negotiation should have been a 'federal' issue and not a 'local' one. It appeared as if the islands were not operating as a collective unit but each only interested in fulfilling its individual interest.

(5) INCOMPLETE FEDERATION

The refusal of British Guiana, British Honduras and the British Virgin Island to participate in the federation weakened the general concept of it at the outset.

(6) JAMAICA REFERENDUM

Manley was in favour of federation, but Bustamante, along with the Democratic Labour Party in Jamaica, opposed it. Manley, in 1961, held a referendum to decide whether Jamaicans wanted to still be a part of this system. Manley lost the elections as 54 per cent of Jamaicans opted for a withdrawal. With such a blow, Manley had to withdraw. As you recall, Manley and Jamaica were one of the influential forces in the federation movement. Jamaica also paid a substantial annual levy; how would this now be supplemented? With Jamaica pulling out, is seemed as if there was no point in continuing the federation. Eric Williams made the famous statement, '1 from 10 equal 0' in relation to Jamaica's withdrawal. Subsequently, Trinidad withdrew from the federation and in March 1962 the federation was dissolved.

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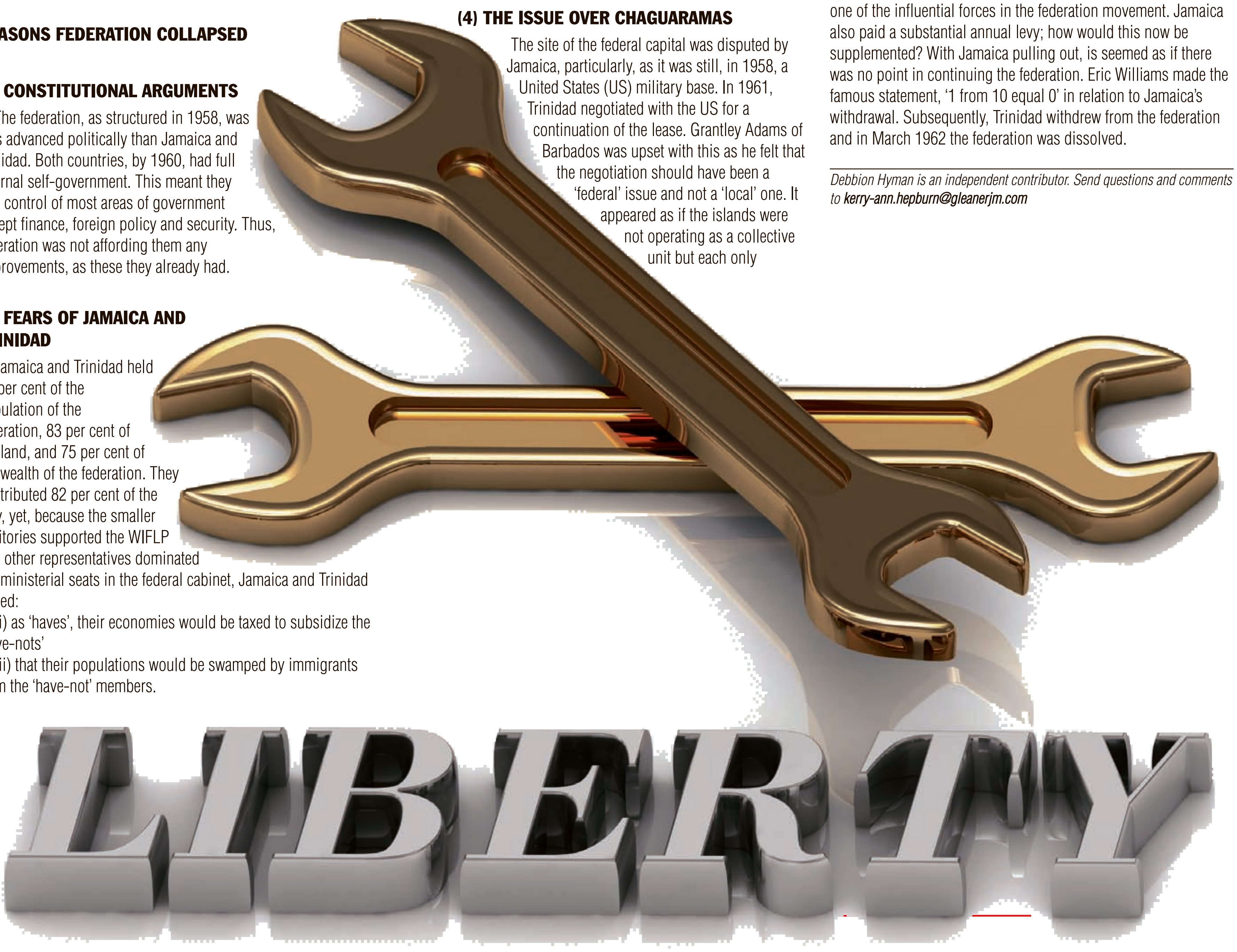

Argumentative essay writing

MELISSA MCKENZIE
Contributor

STUDENTS, IN this week's lesson, we will begin our focus on Section D of the English A paper. The format for your response may change from year to year, which means you can get a speech, letter to the editor or argumentative essay. The length of your essay should be 250-300 words and you will get 40 minutes to write it.

Please note that you will only be getting one question in this section. Therefore, it is very important for you to have knowledge of a wide range of topics or issues. You are encouraged to read the newspaper, watch the news, listen to the radio and browse the Internet so you can keep current. You do not know which topic will form the stimulus, so the more you know, the better.

According to the English A syllabus, this section will assess your ability 'to communicate personal opinion clearly and cogently in language which effectively persuades or dissuades'. It is, therefore, important for you to engage in meaningful discussion and use the relevant persuasive techniques to enhance your information. We all have opinions, but we must be able to communicate them effectively.

As a reminder, here is a list of some key persuasive techniques:

- Rhetorical question
- Repetition
- Quotes
- Evidence/statistics/facts
- Expert/reliable source
- Anecdotes
- Analogy

As long as these persuasive techniques are incorporated strategically in your written response, you will be awarded superior marks.

Now, let's explore the parts of the argumentative essay. In other lessons we will focus on the letter to the editor and speech writing.

WHAT IS THE ARGUMENTATIVE ESSAY?

This essay provides the writer's position on a particular topic. This position is usually taken on a controversial issue and requires the writer to present sound arguments in support of a position.

In the English A examination, you may be asked to write an argumentative essay on topics or issues like:

- Global warming
- Social media
- Free healthcare
- Free education
- Cellular phones in schools
- Corporal punishment
- Capital punishment
- Parenting
- School rules
- Privacy for teenagers
- Vigilante justice
- The impact of technology
- Physical education
- CARICOM

As I stated earlier, please get to know as much as you can about a range of topics or issues. Also, pay attention to what is trending. You never know what you will be asked to do.

PARTS OF THE ARGUMENTATIVE ESSAY

Since you are expected to write between 250-300 words, it is recommended that you use the five-paragraph essay format. Below, I have provided an outline of this format.

INTRODUCTION

The introduction is the first paragraph. Here, the reader gains a general understanding of what stance has been taken and its supporting points. It has a/an:

- Opening statement/hook which is usually in the form of an attention grabber, such as a definition, a proverb, quote or rhetorical question.
- Thesis statement (a declaration of the position to be taken, whether you agree or disagree with the topic to be discussed.)
- Summary of supporting points – This includes briefly mentioning the points that will be elaborated on.

EXAMPLE OF AN INTRODUCTION

Every year during the Easter season, carnival revellers are seen on the street gyrating their sweaty, barely covered bodies. (Opening statements) *This should not be. Carnival is a waste of time and money for varying reasons.*(Thesis) *One, it exposes children to sexually suggestive moves; two, it causes people to spend money they need; and three, it encourages promiscuity.* (Summary of supporting points)

BODY

- The body of the essay is where each of the supporting points is developed/discussed in a separate paragraph. In other words, more information is offered in the form of explanation, examples, statistics or quotes.
- The body should provide counterarguments. This is where you anticipate objections to your points, but you counter them by providing evidence/arguments of your own.
- The body is also held together by the use of link/transitional words. Here are some basic examples: firstly, secondly, thirdly. Each paragraph in the body begins with what is called a TOPIC sentence. This sentence indicates the point that will be elaborated on in that specific paragraph. Note the example below. The topic sentence is underlined.

<u>Firstly, during Carnival, people spend money that they need.</u> This event can be quite expensive as costumes, clothes and liquor are up for sale. In addition, there are different parties that have to be attended. While some people may say carnival is an activity that is saved for, research shows that 60% of the participants do not and are quite impulsive in their spending habits during the carnival season. People usually indulge in what this event has to offer and use money they might need for their household expenses or for their children's education. When the fun stops, these persons will have to face these bills – without the money.

CONCLUSION

- The conclusion brings the essay to a close by restating the stance and the supporting points in a fresh way. It serves as a reinforcement of the argument that has been presented.

Example: *In conclusion, an activity such as carnival that facilitates casual sex, the wasting of much-needed money and the exposure of children to sexually explicit dances is unnecessary. The society is already challenged by other forms of immorality and one less is one step closer to a better life.*

Here are some essay topics that have come on the English A exam in previous years.

1. Using drugs is fine as long as it's done in the privacy of one's home.
2. Homework should be removed from the school system.
3. Bullies have no place in the school system. They should be placed in special institutions.
4. Dancehall music is to be blamed for the indiscipline amongst students.
5. Individuals who refuse to evacuate during a natural disaster should be fined.

You are usually asked to agree/disagree with or express your views on the given topic. Remember, as you prepare for the topic that may come in Section C, do more to know more.

Take care.

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BERYL CLARKE
Contributor

'My Parents'

IN OUR last 'class', we spent time discussing the pain that a son who had become a problem, a criminal, caused his mother. As we consider the poem **My Parents** by Stephen Spender below, there are differences that you should recognise, and we will get to those in time. As is customary, I am asking you to read the poem at least two times if this is the first time you are going to be studying it. Sometimes, as you try to understand a poem, you may have to check on the meanings of some words, but here, perhaps the only one with which you may be unfamiliar is 'lithe'. This is one work with which you should have no difficulty, told as it is by a child in simple language.

MY PARENTS

By Stephen Spender

My parents kept me from children who were rough
Who threw words like stones and wore torn clothes
Their thighs showed through rags they ran in the street
And climbed cliffs and stripped by the country streams.

I feared more than tigers their muscles like iron
Their jerking hands and their knees tight on my arms
I feared the salt coarse pointing of those boys
Who copied my lisp behind me on the road.

They were lithe they sprang out behind hedges
Like dogs to bark at my world. They threw mud
While I looked the other way, pretending to smile.
I longed to forgive them but they never smiled.

When I read this poem for the first time, I wondered why the title is **My Parents**. The speaker is a child and the focus is *"...children who were rough"*, but the poet must have his reasons and we are going to find them. In stanza one, we have a description of the other characters who feature in this poem. It is a description which continues to the end, presenting us with children who are obviously from poor families and are free to roam at will. They are strong and cruel to the speaker, who does not belong to their group. Now, for a closer look at each stanza!

In stanza one, we meet our speaker, who is himself a part of the narrative. We hear that he has parents who control and direct his actions. Then we meet other children who are described as rough; or we can say unrefined or violent or difficult or unpleasant or harsh. The second line supports the idea introduced in line one, in that the word 'rough' can be applied to the words they use, as well as the way they are dressed. These children do not seem to have much, for their clothes are ragged, with parts of their bodies on show. They are free to run wild, whether in the streets or climbing steep rocks or swimming in the streams, and obviously lack the supervision which the speaker's parents provide for him.

In stanza two, the speaker tells us that all the physical activities of the rough children pay off, for they have muscles of iron with which they hold on to him. He, it appears, has been abused by the other boys. He is very scared of them, for he is one against many, and, from his attitude, makes it clear that he cannot match their strength.

What do you think of the use of the word 'salt'? You know that we have an expression which includes the word salt which, when applied to a person, suggests that that person is prone to having bad or unfortunate things happening to him. In this case, the word is paired with the way the rough boys pointed at him as they make him an object of mockery. It is easy, therefore, to grasp that their rude and vulgar gestures hurt the speaker. He is under both physical and emotional abuse. Their cruelty is highlighted in line 8: "*Who copied my lisp behind me on the road.*" I am sure that you can picture them doing this and, because such antics are usually accompanied by laughter, our speaker would be aware and would be embarrassed and humiliated.

The third stanza continues where the second has left off, describing the physical prowess of the group; this time as they are compared to dogs. Again, they throw things, not words on this occasion, but mud. It is to be noted that around them, the boy tries to ignore their hurtful conduct and even pretends to smile. Surprisingly, he is anxious to forgive them, while they offer no sign of wanting to change their relationship.

Words can really do great harm. Try to remember, then, that it is better not to say anything about a person, than to say something hurtful. We will return to this poem next week. God bless!

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Introduction to the Pascal language

NATALEE A. JOHNSON
Contributor

GOOD DAY, students. This is lesson 28 in our series of lessons. In this week's lesson, we will continue to look at an introduction to the Pascal language.

In this lesson, we will be looking at how to code the following constructs using Dev Pascal: if statement, for-do and while-do loop structures. Before we begin, there are two key things I need to highlight when coding in Pascal.

1. NAMING VARIABLES

- Similar to what you learnt with pseudocode, a variable must begin with a letter, and be then followed by any digit, letter or the underscore character.
- No character space is allowed when naming your variables. See the diagrams below, which illustrate good variable names versus bad variable names.

GOOD VARIABLE NAMES

1. num1
2. A1
3. Product_Calculation

BAD VARIABLE NAMES TO USE

1. 6Num
2. _Grade
3. Average Calculation

- You cannot use the name of your program as a variable in the actual program. This will be treated as a duplicate identifier (variable name).

```
program sum;

var num1, num2, sum:integer;
```

Same variable declared in program that is use for the name of the program. **This is not allowed.**

2. FORMATTING REAL VALUES

Pascal allows for real numbers to be formatted to a specified number of decimal places. Let's say you were adding a set of real numbers and then you were required to find the average of the real numbers and print the average. The program line would look like this:

```
write('The Average is',Average:4:2)
```

4 character spaces
2 decimal places

Let's say num1 = 9 and num2 = 4 and as such, the average would be 2.25. Without specifying the character spacing and decimal places, the output would look like this:

```
The Average is 2.25000000000E+00
```

On the other hand, the statement: - Write('The Average is', Average:4:2) would look like this on the screen.

```
The Average is 2.25
```

'IF' STATEMENT

You were already introduced to the If statement when we looked at conditional statements used in pseudocode. Just to remind you, an If statement is used to test a particular condition(s) where if the condition is true, a statement is executed else, if it is false, another statement is executed.

An example of an If statement in Pascal is shown below:

EXAMPLE 1

Write a program to read a number, find the square of the number and print the square of the number if greater than 100, else output 'the squares is too small'.

```
Program Square_of_Numbers;
Uses wincrt;
Var num, Square:integer;
Begin
  Writeln('Enter a number');
  Readln(num);
  Square := num * num;
  if Square > 100 then
     Writeln(Square)
  else
     Writeln('THE SQUARE IS TOO SMALL');
readln;
End.
```

Note that there is no semi colon placed at the end such that the else statement can be executed if the condition is not true.

'FOR' LOOPS

Remember, your 'for' loops are definite loops; whatever is placed in the block of the loop will be executed a specified number of times. Let's look at an example of a 'for' loop using Pascal code.

EXAMPLE 2

Write a program to read 10 integer scores, find the sum of the 10 scores and output the sum.

```
Program Sum_of_Scores;

Uses wincrt;

Var count, score, sum:integer;

Begin

  sum:= 0;

For count := 1 to 10 do

  Begin

    writeln('Enter next score');

    readln(score);

    sum := sum + score;

  End;

writeln('The Sum is:', sum);

Readln;

End.
```

Initialization of a variable

The Repetitive Statement

Block Statements that will be repeated 10 times enclosed in another **begin** and **end**, except this '**end**' ends with a semi colon.

We have come to the end of this lesson. Remember, if you fail to prepare, you prepare to fail.

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Listening comprehension

TRUDI MORRISON
Contributor

WE HAVE reviewed the requirements for the oral presentation of the expository section of the SBA. This week, we will take a look at the listening comprehension.

LISTENING VERSUS HEARING

The skill of listening is one that is underrated though very important. Many persons confuse hearing and listening when, in fact, they are two different activities. Hearing is an involuntary action wherein sound enters the ear as stimuli. Listening, on the other hand, goes beyond merely perceiving sounds. It is a voluntary and conscious activity which involves paying attention to what is heard.

TYPES OF LISTENING

There are four types of listening:

1. **Comprehensive listening** – This takes place when we listen to comprehend a message, as students do in class.
2. **Appreciative listening** – This describes listening for pleasure or entertainment, as we do when we listen to our favourite songs.
3. **Empathetic listening** – This involves listening as a means of emotional or moral support (and providing feedback that you are in fact listening). Counsellors, therapists and good friends engage in this type of listening.
4. **Critical listening** – This type of listening engages critical-thinking skills and involves listening in order to evaluate a message. Politicians and political pundits engaged in this kind of listening as they listened to the Government's plans for the new fiscal year.

You must be intentional about listening carefully if you want to be a good communicator. Through listening, we learn new things and are able to formulate appropriate responses as we observe and listen to our audience. Listening, therefore, goes beyond merely detecting sound and choosing which one we should focus on; we must derive meaning from the sounds we hear and respond appropriately. So, imagine that as you stroll to Half-Way Tree after school, you detect amid the buzz of evening traffic, a voice saying, 'Don't move'. You choose to focus on the voice because it sounds near to you and the tone communicates danger. The speaker repeats the same two words with even more urgency and you freeze. In another few seconds, you see a pickpocket slip a phone from the pocket of someone in front of you. Had you continued, you may have been the victim.

THE LISTENING COMPREHENSION

Your ability to fully engage your listening skills will be tested in the listening comprehension section of the external exam. The listening comprehension forms the first part of the multiple-choice (Paper 01) exam. The first seven questions are based on a reading of an extract of communication. It can be a poem, excerpt from a story, speech, *et cetera*. You should approach the exam strategically to ensure that you get all seven questions correct.

Here are some tips for acing the listening comprehension:

- Before the first reading, read the questions carefully so you know how to focus your listening. Do not try to hear everything – you may end up hearing nothing.
- Make notes according to the questions you have been asked.
- During the second reading, double-check your responses.
- Finally, select the best response to the question asked.

You will hear the following instruction from your examiner:

Items 1-7 constitute Section A of this paper. They are based on an extract which I will read to you. You will be given two minutes to look at the items before you listen to the extract. Then I will read the extract twice.

You are required to listen carefully to the extract before answering the items. You may make notes while you listen to the reading. You must not begin to answer the items until you are told to do so.

You are required to respond to the items on your answer sheet by selecting the correct option from the four options lettered A-D.

You will then be instructed to look at the items for two minutes. When two minutes have passed, your examiner will say:

Now listen carefully while I read the extract twice. Remember, you may make notes while I read.

The passage will be read through at a reasonable pace so as to facilitate understanding, but not to enable dictation nor to distort the meaning. After a brief pause, your examiner will announce that the passage will be read a second time. When he/she is through, he/she will say:

You have 90 minutes to answer all the items on Paper 01. When you are finished answering those items which are based on this extract, go straight to Section B and answer questions 8-45. DO not wait for any further instructions. I will tell you when 15 minutes are left.

At 75 minutes into the exam, the invigilator will advise that you have 15 minutes left and then advise when your time is up.

Next week, we will review an extract which appeared on a past paper.

All the best!

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CLEMENT RADCLIFFE
Contributor

Matrix

THIS BEING the end of our nine-month journey, I do hope my contributions have provided some support. It is, however, your efforts which will make the difference.

At the outset, I wish to highlight the following points about matrices. They are vital to your full understanding of this topic.

- There is no reason to have difficulty in multiplying 2 x 2 matrices. You just need to continue practising the principle – rows multiply by columns, both with the same number of elements.
- Squaring the 2 x 2 matrix A is found by multiplying A x A.
- The determinant of a 2 x 2 matrix has value ad - bc, where the elements of the matrix are a, b, c, and d.
- The value of the determinant of a singular 2 x 2 matrix is zero, that is ad-bc = 0 .

The above are illustrated by the solutions of the homework given last week.

SOLUTIONS TO HOMEWORK

1. Given the matrices $A = \begin{pmatrix} 3 & 1 \\ 2 & 0 \end{pmatrix}$ and $B = \begin{pmatrix} -2 & 4 \\ 3 & -1 \end{pmatrix}$

Find the values of i) 3A ii) -2B

Solution

i) Given that $A = \begin{pmatrix} 3 & 1 \\ 2 & 0 \end{pmatrix}$ then $3A = \begin{pmatrix} \mathbf{9} & \mathbf{3} \\ \mathbf{6} & \mathbf{0} \end{pmatrix}$

ii) Given that $B = \begin{pmatrix} -2 & 4 \\ 3 & -1 \end{pmatrix}$ then $-2B = \begin{pmatrix} \mathbf{4} & \mathbf{-8} \\ \mathbf{-6} & \mathbf{2} \end{pmatrix}$

2. Matrix $C = \begin{pmatrix} 6 & 2 \\ 5 & p \end{pmatrix}$ is a singular matrix. Calculate the value of p.

Given p, find C^2.

SOLUTION

As C is a singular matrix, then the value of the determinant of C is zero.

Give the determinant $\begin{vmatrix} a & b \\ c & d \end{vmatrix}$ then its value ad - bc = 0

Substituting the elements of matrix C,

:. 6 x P - 2 x 5 = 0

:. 6P - 10 = 0

:. 6P = 10 or P = 5/3

Answer P = 5/3

Since P = 5/3,

Then $C^2 = \begin{pmatrix} 6 & 2 \\ 5 & 5/3 \end{pmatrix} \begin{pmatrix} 6 & 2 \\ 5 & 5/3 \end{pmatrix} = \begin{pmatrix} 6 \times 6 + 2 \times 5 & 6 \times 2 + 2 \times 5/3 \\ 5 \times 6 + 5/3 \times 5 & 5 \times 2 + 5/3 \times 5/3 \end{pmatrix}$

$= \begin{pmatrix} 36 + 10 & 12 + 10/3 \\ 30 + 25/3 & 10 + 25/9 \end{pmatrix} = \begin{pmatrix} 46 & 46/3 \\ 115/3 & 115/9 \end{pmatrix}$

2. Given the matrix $H = \begin{pmatrix} h & 2 \\ 2 & -h \end{pmatrix}$

(i) Determine H^2

(ii) Evaluate h, if $H^2 = 5\,x \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$

SOLUTION

(i) Be reminded that the product of H2 x 2 x H2 x 2 is a 2 x 2 matrix.

(i) Be reminded that the product of $H_{2\times2} \times H_{2\times2}$ is a 2×2 matrix

$H^2 = \begin{pmatrix} h & 2 \\ 2 & -h \end{pmatrix} \times \begin{pmatrix} h & 2 \\ 2 & -h \end{pmatrix}$

$= \begin{pmatrix} h\times h + 2\times2 & h\times2 + 2\times\text{-}h \\ 2\times h + \text{-}h\times2 & 2\times2 + \text{-}h\times\text{-}h \end{pmatrix} = \begin{pmatrix} h^2+4 & 0 \\ 0 & 4+h^2 \end{pmatrix}$

(ii) Since $H^2 = 5\,x \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$

$\begin{pmatrix} h^2+4 & 0 \\ 0 & 4+h^2 \end{pmatrix} = 5\,x \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$

$(h^2+4) \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} = 5\,x \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} =$

- $h^2 + 4 = 5$ or $h^2 = 1$
- $h^2 = 1$ h= ± 1

Answer h = ± 1

Let us now proceed to use matrices to solve simultaneous linear equations. The method involved is as follows:

An important prerequisite is to be able to find the inverse of a 2x2 matrix.

- Given the matrix A, then the inverse of A is:

$$\frac{1}{ad - bc} \begin{pmatrix} d & -b \\ -c & a \end{pmatrix}$$

EXAMPLE

Given that $A = \begin{pmatrix} 3 & 6 \\ 1 & 5 \end{pmatrix}$, find the inverse of A, or A^{-1}

Using the formula above, $A^{-1} = \frac{1}{9} \begin{vmatrix} 5 & -6 \\ -1 & 3 \end{vmatrix}$

n The simultaneous equations are expressed in matrix form A x X = B, where A is the 2 x 2 coefficient matrix, X is the 2 x 1 matrix $\begin{pmatrix} x \\ y \end{pmatrix}$ and B the 2 x 1 matrix of the constant terms.

For example, given the equations, 2x + 4y = 7
3x - y = 5

It is expressed as: $\begin{pmatrix} 2 & 4 \\ 3 & -1 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 7 \\ 5 \end{pmatrix}$

- The 2 x 2 coefficient matrix A is converted to the unit matrix by premultiplying both sides by the Inverse of A
- $A^{-1} \times A \times X = A^{-1} B$.

NB: You must multiply both sides of the equation to maintain the values of the variables.

- By simplifying both sides, the equation of two 2 x 1 matrices remain.
- Equating terms will enable you to find the values of x and y, the solution of the original simultaneous equations.

The above is illustrated by the solution to the following example.

EXAMPLE

Given that -3x + 2y = -11
5x + 4y = 33

(a) Express the simultaneous equations in the form C x X = D

(b) Given the 2 x 2 matrix C, find:

(i) The determinant of C

(ii) The inverse of C

SOLUTION

(a) -3x + 2y = -11
5x + 4y = 33 is expressed as:

$\begin{pmatrix} -3 & 2 \\ 5 & 4 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} -11 \\ 33 \end{pmatrix}$

I expect that the pattern is clear.

(b) (i) As C is $\begin{pmatrix} -3 & 2 \\ 5 & 4 \end{pmatrix}$ then the determinant is

-3 x 4 - 2 x 5 = -12 - 10 = -22

(ii) Given the matrix $\begin{pmatrix} -3 & 2 \\ 5 & 4 \end{pmatrix}$

then the inverse is:

$$\frac{1}{ad - bc} \begin{pmatrix} d & -b \\ -c & a \end{pmatrix}$$

The inverse of C is: $\frac{1}{-22} \begin{pmatrix} 4 & -2 \\ -5 & -3 \end{pmatrix}$

The solution of the simultaneous equations is as follows:

Given $-3x + 2y = -11$
$5x + 4y = 33$

$$\begin{pmatrix} -3 & 2 \\ 5 & 4 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} -11 \\ 33 \end{pmatrix}$$

Premultiply both sides by the inverse of C.

$$\frac{1}{-22} \begin{pmatrix} 4 & -2 \\ -5 & -3 \end{pmatrix} \begin{pmatrix} -3 & 2 \\ 5 & 4 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \frac{1}{-22} \begin{pmatrix} 4 & -2 \\ -5 & -3 \end{pmatrix}$$

$$\frac{1}{-22} \begin{pmatrix} -22 & 0 \\ 0 & -22 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \frac{1}{-22} \begin{pmatrix} -110 \\ -44 \end{pmatrix}$$

$$\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 5 \\ 2 \end{pmatrix}$$

$$\begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 5 \\ 2 \end{pmatrix}$$

:. x = 5 and y = 2.

Let us now attempt the following example together.

(a) Solve the simultaneous equations:

$3x + 2y = 1$
$x + 4y = -3$

Expressing the above in matrix form

$$\begin{pmatrix} 3 & 2 \\ 1 & 4 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 1 \\ -3 \end{pmatrix}$$

The inverse of $\begin{pmatrix} 3 & 2 \\ 1 & 4 \end{pmatrix} = \frac{1}{10} \begin{pmatrix} 4 & -2 \\ -1 & 3 \end{pmatrix}$

Premultiplying both sides of the matrix equation by the inverse of A.

$$\frac{1}{10} \begin{pmatrix} 4 & -2 \\ -1 & 3 \end{pmatrix} \begin{pmatrix} 3 & 2 \\ 1 & 4 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \frac{1}{10} \begin{pmatrix} 4 & -2 \\ -1 & 3 \end{pmatrix} \begin{pmatrix} 1 \\ -3 \end{pmatrix}$$

$$\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

$$\begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 1 \\ -1 \end{pmatrix}$$

:. x = 1 and y = -1

A very happy Aaliyah Nelson (left) as she is selected for a model search by Pulse's Romae Gordon.

Now, please attempt the following on your own.

Solve the following simultaneous equations using the matrix method.

(a) $4x + y = -3$
$3x + 2y = -1$

(b) $3x - 2y = -1$
$4x - y = 2$

■ To continue to review, effectively, the work presented during the year.

■ It is vital that you have available copies of all the lessons which were presented.

■ These should be a critical part of your review package.

■ Your review package should also include past-paper questions, model answers and a suitable calculator.

■ You also need a current CXC syllabus to ensure adequate coverage. This will ensure that you review those topics which I omitted.

■ I do hope that you have been using your calculator and that you are familiar with it.

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THREE different types of errors which a trial balance will NOT reveal:

These are:

i. Complete omission of a transaction, so there is no debit or credit entry.

ii. Entry of a transaction on both sides, but in the wrong account or accounts.

iii. Errors in original entry where the original figures were incorrectly entered although the correct double-entry principle has been observed.

THREE errors of bookkeeping which could cause the trial balance to disagree.

These are:

1. Wrong addition in any account in the general ledger.

E.g., sales account under-added by $250.

Result: The credit side will be less than debit side of the trial balance by $250.

2. Omission of either the debit or credit entry of a transaction.

E.g., Cash payment of $750 received from Tom Jolly, a debtor, was recorded in the cash book only.

Result: The error of omitting the posting of the amount on the credit side of Tom Jolly's account will result in a higher debit total of trial balance by $250.

3. Entry on the wrong side of the account.

E.g. Interest paid $150 was credited to the cash book but was wrongly credited to Interest received account.

Result: An expense paid $150 but posted wrongly to the credit side of an income account will make the credit side of the trial balance be more than the debit side by $300.

This is where we end for this week. Join me next week as we continue to complete the syllabus. Grasp the concepts and retain them; you will need them as you progress to excellence. See you next week.

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7. One of the worst problems faced by the Caribbean people is that we tend to import much more than we export (increased local production, buying of local goods ,and use of skills).

8. With the 'advent' of borrowing from organisations such as the International Monetary Fund, some Caribbean countries owe a lot of money as a result of borrowing to sustain themselves (reduce borrowing as much as possible).

9. Markets are not available in areas that are most lucrative.

10. In a technological age, many Caribbean countries still do not possess and use adequate technology that could greatly increase production (investment in technology to help in the creation of goods and services).

11. In many countries, skilled persons in certain areas, who could booster production with their expertise, are generally lacking. (development of human resources)

ACTIVITIES

1. Suggest THREE reasons why regional integration is so crucial to the Caribbean region. Explain your answer.

2. Suggest THREE reasons why Caribbean integration is facing problems and state how they may be best resolved.

http://www.caribbeanelections.com/education/integration/default.asp and http://slideplayer.com/slide/5296487/

Monday, February 22, 2010: REGIONAL INTEGRATION - ESSAY http://caribbeanstudiesmccall6.blogspot.com/2010/02/regional-integration-essay.html

NB:

Your examination will be on Thursday, May 10, 2018.

Paper 01: 9 a.m. (2 hours and 40 minutes)

Papers 02 and 03: 1 p.m.

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