



education

DEPARTMENT: EDUCATION
MPUMALANGA PROVINCE

Grade 12 Education Supplement 2010



Dear Learner

There are less than 40 school days left before the start of the 2010 Grade 12 Examination. This requires special focus and dedication from you to be ready for these examinations. It is important that every second/minute be used for the enhancement of your studies.

In this context, the Department of Education is implementing the following programmes as a means to catch up for the lost time for teaching and Learning:

- **SABC Radio Support Programme**
- **Dial a Tutor Programme**
- **Saturday Classes and**
- **Spring Classes**

SABC Radio Support Programme

SABC (Ikwekwezi FM and Ligwalagwala FM) in collaboration with the Department of Education is broadcasting daily lessons from 14H30 to 15H00 and from 21H30 to 22H00. These slots are utilized to explain difficult concepts and to enrich content knowledge. Subject Specialists are deployed to talk about various subject content material of addressing recurring problems that learners face. In due course these programmes will be extended to Community Radio Stations.

Dial a Tutor Programme

This programme assists learners who may experience challenges while studying at home. Learners can dial the **Departmental Toll Free line 0800 203 116** from **18H00 to 20H00** from Monday to Thursday to be linked with an expert Curriculum Specialist who will provide guidance on the spot.

Saturday Classes

The Department will implement Saturday classes to catch up for the lost time. You are urged to take advantage of this opportunity.

Afternoon and morning classes

Schools will be urged to have extra classes to recover the lost time by utilizing the supplements for revision and examination preparation.

Spring Classes

The Department will convene Spring Classes for Grade 12 learners from 27 September to 01 October 2010. This will add impetus in our quest to cover the lost time and to improve learner performance.

Previous Question Papers

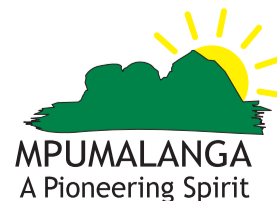
The previous question papers & memoranda can be downloaded from the Departmental Website:
www.mpumalanga.gov.za/education

The Grade 12 Examinations will start on the 25 October to the 03 December 2010.

Kindly take advantage of the opportunity created by the Department to improve your studies.

Thank You.

“Together Educating the Nation”



TOLL FREE NUMBER: 0800 203 116

Mathematics

SOLVING TRIGONOMETRIC EQUATIONS AND FINDING THE GENERAL SOLUTION

What is the general solution?

When the interval in which a solution is to be found, is not restricted, trigonometric equations will have infinitely many solutions. The general solution is a way of writing down **all of these solutions**.

There is no general rule to solve trigonometric equations, but in most cases it is useful to reduce the equation to $\sin x = a$, $\cos x = b$ or $\tan x = c$.

In order to determine the value of x if $\sin x = 0,766$ we do the following:

If $\sin x = 0,766$, then $x = 50^\circ$ or 130° (use your calculator and remember $\sin x$ is positive in the first and second quadrants)

Since the period of $\sin x$ is 360° , we must add integral multiples of 360°

So $x = 50^\circ + n \cdot 360^\circ$ or $130^\circ + n \cdot 360^\circ$, $n \in \mathbb{Z}$

If we are given the interval e.g. $x \in [-360^\circ; 360^\circ]$

Then $x = 50^\circ; -310^\circ; 130^\circ; -230^\circ$

Hints for the solution of trigonometric equations:

- Normally the equation is simplified to one trigonometric ratio with one angle.
- Simplify the equation by using identities where possible.
- Compound angles and double angles must be simplified to single angles.
- Factorisation, as in the solution of algebraic equations, is often used.

Look out for the following:

- common factors
- difference of squares
- quadratic trinomials
- grouping of polynomials

REMEMBER

- When squaring a solution on both sides, additional solutions are usually obtained. Don't forget to check your answers.
- Take care not to divide by an unknown variable. Make absolutely sure that the value is not equal to zero.
- Use the rules to determine in which quadrants the angle will be.
- Remember the general solution depends on the period of the function.

EXAMPLES

Solve for x : $\sin x - \sin x \cos x = 0$

SOLUTION:

Extracting the common factor we have:

$$\sin x (1 - \cos x) = 0$$

$$\sin x = 0 \quad \text{or} \quad 1 - \cos x = 0$$

$$\cos x = 1$$

$$x = 0^\circ \text{ or } 180^\circ \text{ or } 360^\circ \text{ or } x = 0^\circ \text{ or } 360^\circ$$

$$x = k \cdot 180^\circ; k \in \mathbb{Z}$$

Solve for θ : $\sin^2 \theta - \sin \theta - 1 = 0$ (general solution)

SOLUTION:

Let $\sin \theta = y$

$$\text{Then } y^2 - y - 1 = 0$$

The solutions to this equation are: $y_{1,2} = \frac{1 \pm \sqrt{5}}{2}$

This gives us $\sin \theta = \frac{1 + \sqrt{5}}{2} = 1,618$ which is not a solution

Or $\sin \theta = \frac{1 - \sqrt{5}}{2} = -0,618$ whose solutions in the fundamental interval

$$\text{are: } \theta_1 = 312,8^\circ \quad \text{or} \quad \theta_2 = 218,2^\circ$$

$$\theta = 218,2^\circ + k \cdot 360^\circ; k \in \mathbb{Z} \quad \text{or} \quad \theta = 321,8^\circ + k \cdot 360^\circ; k \in \mathbb{Z}$$

Solve for x : $\cos 2x + 7 \sin x - 4 = 0$ ($x \in [0^\circ; 180^\circ]$)

SOLUTION:

$$1 - 2 \sin^2 x + 7 \sin x - 4 = 0$$

$$2 \sin^2 x + 7 \sin x - 3 = 0$$

$$(2 \sin x - 1)(\sin x - 3) = 0$$

$$\sin x = \frac{1}{2} \quad \text{and} \quad \text{No solution } (\sin x \neq 3)$$

$$x = 30^\circ \text{ or } 150^\circ$$

EXERCISES:

1. Solve for x : $\sin x = 3 \cos x$; $x \in [90^\circ; 360^\circ]$

2. Solve for x : $6 - 10 \cos x = 3 \sin^2 x$; $x \in [-180^\circ; 180^\circ]$

3. Solve for A : $\tan^2 A - 3 \tan A - 4 = 0$ for $A \in [-90^\circ; 0^\circ]$

4. Find the general solution of the following equations:

a. $\tan 3x = \tan 24^\circ$

b. $\sqrt{2} \sin(x - 10^\circ) - 1 = 0$

c. $\cos 2x - 5 \cos x - 2 = 0$

d. $\cos \theta - \frac{1}{\cos \theta} = \frac{5}{6}$

e. $4 \sin x \cos x = 1$

f. $\sin 2x - \sin x + 2 \sin^2 x - \cos x = 0$

5. Find the solution of the equation: $\sin 2x + \sin x = 6 \cos x + 3$ in the interval $[-360^\circ; 360^\circ]$.

ANSWERS:

1. $x = 251,6^\circ$

2. $x = \pm 70,5^\circ$

3. $A = -45^\circ$

4a. $x = 8^\circ + n(60^\circ)$

b. $x = 55^\circ + n \cdot 360^\circ$ ($n \in \mathbb{Z}$)

c. $x = \pm 120^\circ + n \cdot 360^\circ$, $n \in \mathbb{Z}$

d. $\theta = \pm 131,8^\circ + n \cdot 360^\circ$

e. $x = 15^\circ$ or $75^\circ + n \cdot 180^\circ$; $n \in \mathbb{Z}$

f. $x = 135^\circ + n \cdot 180^\circ$ or $x = 150^\circ + n \cdot 360^\circ$; $n \in \mathbb{Z}$

5. $x = -120^\circ$

Accounting

EXEMPLAR QUESTION

You are provided with information relating to Milton stationers for the financial year ended 29 February 2010. Milton stationers, is owned by John Milton and sells grade 10 Accounting books. All the books are sold at R80, 00 each.

INFORMATION

During the year John bought the following books:

- 400 books at R41,25 each on 20 July 2009
- 350 books at R60,00 each on 8 November 2009

During the year he sold 700 books at R80,00 each.

INSTRUCTION:

1. Explain the difference between using the FIFO (first-in-first-out) and Weighted Averages methods to calculate the cost of sales and to value the unsold inventory at the end of an accounting period. (4)
2. Calculate the following by using the two different inventory valuation systems.

No.	Question	FIFO	Weighted Averages
2.1	The total sales amount for the year		
2.2	The cost price (cost of sales) of the books sold during the year		
2.3	The gross profit for the year		
2.4	The value of the inventory left over at the end of the year		

(18)

[22]

SOLUTION

1.	Difference between FIFO and Weighted Averages.
	FIFO: Assume that inventory bought first is the inventory that is sold first. ✓✓
	Weighted Averages: Bases the value of inventory on the average price / cost per item. Every time the business makes a purchase the weighted average purchase cost is recalculated. ✓✓

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2. Calculations using the two different inventory valuation systems.		FIFO	Weighted Averages
No.	Question		
2.1	The total sales amount for the year	$(700 \times R80) = R56\ 000$ ✓	$R56\ 000$ ✓
2.2	The cost price (cost of sales) of the books sold during the year	$(400 \times R41,50) + (300 \times R60,00)$ $= R34\ 500$ ✓✓✓✓	$(400 \times R41,50) + (350 \times R60,00)$ $= R37\ 500$ $R37\ 500 / 750 = R50$ $R50 \times 700 = R35\ 000$ ✓✓✓✓
2.3	The gross profit for the year	$56\ 000 - 34\ 500$ $= R21\ 500$ ✓✓	$56\ 000 - 35\ 000$ $= R21\ 000$ ✓✓
2.4	The value of the inventory left over at the end of the year	$50 \times R60 = R3\ 000$ ✓✓	$50 \times R50 = R2\ 500$ ✓✓

18

[22]

Business Studies

TOPIC: RECENT LEGISLATION IN THE BUSINESS ENVIRONMENT

When South Africa became a democratic country in 1994 many changes had to be made to existing legislation and new legislation had to be introduced to ensure equality for all.

Businesses must comply with legislation in the operation of their business. They must keep up to date with recent legislation as it applies to their respective businesses.

EXAMPLES OF SPECIFIC RECENT LEGISLATION:

BROAD BASED BLACK ECONOMIC EMPOWERMENT (BBBEE) ACT OF 2003

- White people are explicitly excluded from this Act. The Act uses “Black” as a generic term for African, Indians and Coloreds, who are to benefit from this legislation.
- The Black Economic Empowerment Act (BEE) is seen as a powerful way to broaden the country’s economic base accelerate growth, create jobs, and to eradicate poverty.
- The main issues covered by the Act are:
 - Businesses that comply with BEE criteria will get preference when they tender for government work, licenses and contract.
 - Direct ownership of a business in the form of shares.
 - The responsibility of business is to increase the skills of workers and build their capacity.

PILLARS OF BBBEE

- Ownership – black ownership or shareholders
- Management – Black presentation on the Board of Directors
- Employment Equity – Equal representation in all categories and levels of the workforce.
- Skills development – Invest in Human resources and the training of Black people. Develop skills of black people
- Enterprise development - Support and invest in other BEE-companies
- CSI – Invest money in communities and help with upliftment.

THE SKILLS DEVELOPMENT ACT (1998) AND SKILLS DEVELOPMENT LEVIES ACT (1989)

- Due to a shortage of skilled labour South Africa finds it difficult to compete in the global market.
- The private sector needs to assist government and contribute towards the increase of skilled labour in the country.
- The levy scheme is governed by the Skills Development Act, 1998, and the Skills Development Levy Act, 1999.
- The levies will contribute towards the development of skills, knowledge and competencies of the labour force.
- Education and training will have the effect of increased employment and social development.
- Improved employment opportunities will create increased productivity and higher competitiveness.

THE SKILLS DEVELOPMENT ACT AND SECTOR EDUCATION AND TRAINING AUTHORITY ACT

- In terms of the Skills Development Act, every employer in South Africa with more than a payroll of R250 000 must register with SARS and pay a levy of 1% of their salary and wage bill to the Department of Labour. These monies will be distributed to the SETA’s to which the contributor belongs.
- These funds are used by businesses to develop skills of employees when they register for training programmes approved by their relevant Sector Education and Training Authority (SETA).
- Different SETA’s exist, representing groupings of industry, as for example the Services SETA and the Wholesale and Retail SETA.
- Learnerships are put in place to provide structured formal learning and to link it with experience at the same time. This will lead to a recognised qualification.
- Learnerships are suited for careers in technical fields such as aviation technicians, motor car mechanics, welders, plumbers and electricians as well as office administration such as Office Administration and Information Technology.

NB: LEARNERS MUST STUDY ALL OTHER LEGISLATION THAT AFFECTS BUSINESSES.

Also study the following legislation from your textbooks:

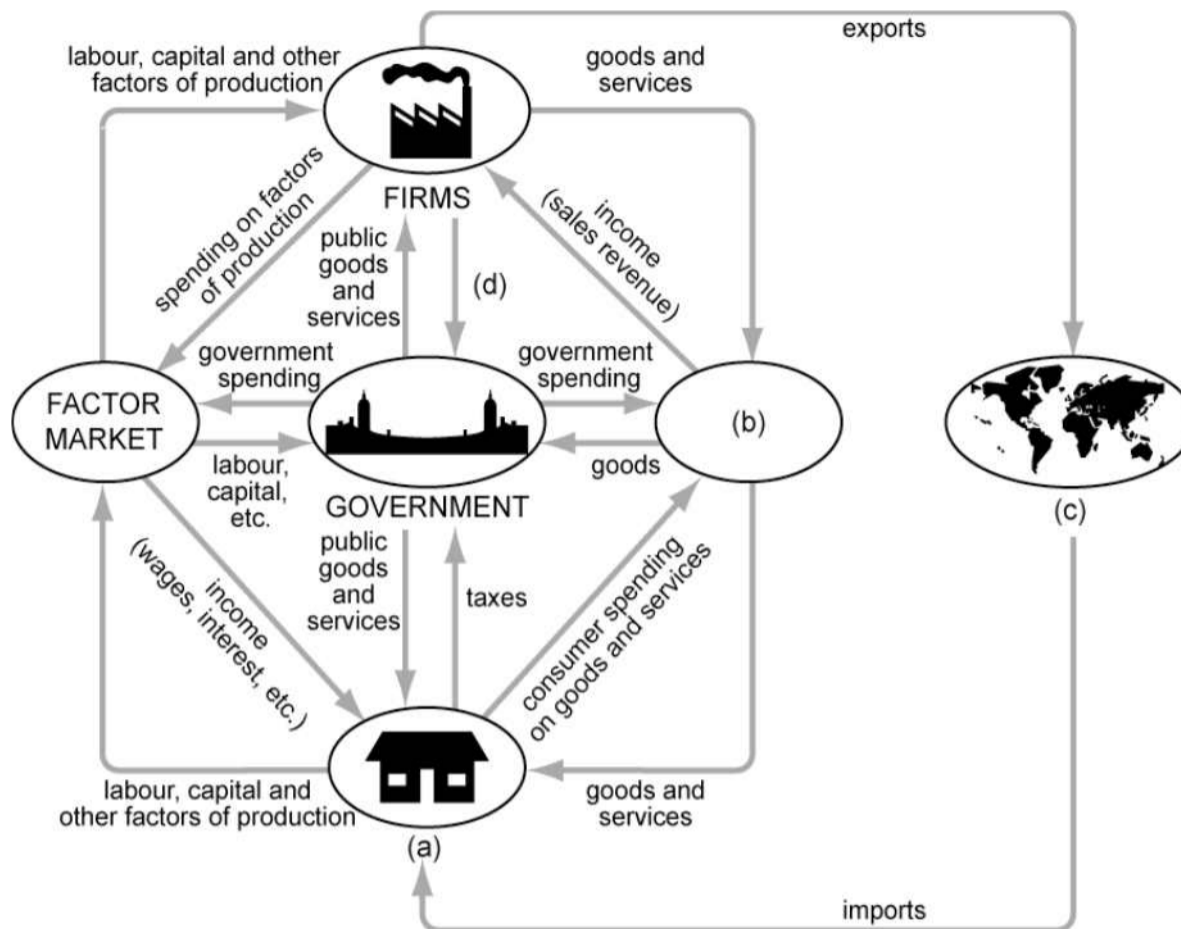
- New Labour Relations Act (1995)
- Basic Conditions of Employment Act (1997) (BCEA)
- The Employment Equity Act.
- Any other relevant legislation.

Economics

ECONOMICS GR.12

QUESTION 1

1 Use the diagram below to answer the questions that follow.



- 1.1 Provide the missing labels in the diagram for (a), (b), (c) and (d). (8)
- 1.2 Explain what is meant by an injection of money into the circular flow of income and spending. (6)
- 1.3 Identify the injections into the economy from the diagram above. (6)

SUGGESTED SOLUTIONS

QUESTION 1

- 1.1
- Households ✓✓
 - Goods market ✓✓
 - Foreign sector ✓✓
 - Taxes ✓✓
- (8)
- 1.2 An injection into the circular flow is any spending ✓✓ which is not derived from income (Y). ✓✓ Injections represent the introduction of additional money into the economy. ✓✓ (6)
- 1.3 In the diagram the injections are:
- Government spending (G) ✓✓
 - The revenue earned from exports (X) ✓✓
 - Investment spending (I) ✓✓
- (6)

Physical Science

UNIT 1: ELECTROSTATICS

1. Force between charges (Coulomb's Law)
2. Electric field around single charges and groups of charges
3. Electrical potential energy and potential
4. Capacitance, physics of the parallel plate capacitor, relation between charge, potential difference and capacitance
5. Capacitor as a circuit device

LESSON 1.1: Force between charges (Coulomb's Law)

Lesson Outcomes

- Understand Coulomb's Law: Forces charges exert on each other.
- State Coulomb's Law (supplied with an equation for Coulomb's Law).
- Carry out calculations using Coulombs Law in different contexts, given charges and the distance between the charges in different units; eg nC, μC , nm, cm.

1.1.1 Introduction

Electrostatics influences the very being of our lives. Electrostatics are presented in many forms such as lightning, the shock you get when you touch something like your jersey or somebody, the working of ink jet printers, precipitators that clean the gases from factories, the capacitors that are used as memory in electronic devices like computers and cell phones and selectors in radios and television.

1.1.2 Concepts of electrostatics (Prior Knowledge)

Electrostatics has to do with charges that are mainly stationary relative to each other or moving very slowly. **Electric charge** is an intrinsic characteristic of the particles of an object. The vast amount of charge in an everyday object is usually hidden because the object contains **equal amounts** of the two kinds of charge: **positive charge** and **negative charge**. The charges are **balanced** or **neutral** on an object when there are equal amounts of positive charge and negative charge. The charges are **imbalanced** when an object has a **net charge**, either positively charged or negative charged. An imbalanced or net charge occurs when charges are **separated** when objects come in **close contact** with each other.

The imbalance is always **very small** compared to the total amounts of positive charge and negative charge contained in the object. An object is **negatively charged** when there is **more negative charge** than positive charge (more electrons than protons) on the object. A **positively charged** object has more positive charge than negative charge (fewer electrons than protons) on the object. Like (same) charges **repel** each other; unlike (opposite) charges **attract** each other. Charged objects interact by **exerting forces** on one another.

Objects are not charged through friction, but **separation of charge** when objects came in **close contact** with each other. The more you rub an object the **more charge** or electrons come in **close contact** with an object that can be separated.

1.1.3 Force between charges (Coulomb's Law)

Coulomb found that the magnitude of this electrostatic force depends upon **three variables** namely;

- **the magnitude of each charge.** It was found that the **force F**, between two charged particles, Q_1 and Q_2 , is **directly proportional to the product of the two charges.**

$$F \propto Q_1 Q_2$$

- **the distance between the two charges.** It was found that the **force F**, between two charged particles, let's call them Q_1 and Q_2 , is **inversely proportional to the square of the distance between the charges.**

○

$$F \propto \frac{1}{r^2}$$

- If we combine (put together) these two relationships, we find that

$$F \propto \frac{Q_1 Q_2}{r^2}$$

$$F = \frac{k Q_1 Q_2}{r^2}$$

where $k = 9 \times 10^9 \text{ N.m}^2.\text{C}^{-2}$. k is the proportionality constant. F = force measured in N, r = distance measured in m and Q = charge measured in C (coulombs).

Thus, **Coulomb's Law** is known as:

The force between two charged objects is directly proportional to the product of their charges and inversely proportional to the square of the distance between them.

Physical Science (continue)

Please Note:

(a) The charge of one coulomb is a very big charge and the magnitudes of the charges that we will work with, will often be smaller than one coulomb (1C); so you must know the following:

Micro coulomb, (symbol μC): $1 \mu\text{C} = 0,000\ 001 = 1 \times 10^{-6}\text{C}$
Nano coulomb, (symbol nC): $1 \text{nC} = 0,000\ 000\ 001 = 1 \times 10^{-9}\text{C}$
Pico coulomb, (symbol pC): $1 \text{pC} = 0,000\ 000\ 000\ 001 = 1 \times 10^{-12}\text{C}$

(b) In most of the problems you will be given the distance between the two charges in cm or mm. You must remember to convert into the metres (m) for example:

1 cm = 0,01 m (divide by 100), 1 mm = 0,001 m (divide by 1000).

(c) Remember that in the formula it is r^2 , so do not forget to **square** the distance between the two charges.

Example 1.1

Solution

REMEMBER: Always convert to SI units when calculating.

$$F = \frac{kQ_1Q_2}{r^2}$$

Important. Write down the different variables.

$$F = ? \quad Q_1 = 3 \mu\text{C} = 3 \times 10^{-6}\text{C} \quad Q_2 = 4 \mu\text{C} = 4 \times 10^{-6}\text{C}$$

$$r = \frac{30}{1000} = 0,03 \text{ m} \quad k = 9 \times 10^9 \text{ N}\cdot\text{m}^2\cdot\text{C}^{-2}$$

$$F = \frac{9 \times 10^9 \times 3 \times 10^{-6} \times 4 \times 10^{-6}}{0,03^2} = 120\text{N, repulsion}$$

Example 1.2

Calculate the distance between two objects with charges, one of $5 \mu\text{C}$ and the other $-4 \mu\text{C}$ which experience an attractive force of 50 N.

Solution

$$F = \frac{kQ_1Q_2}{r^2}$$

Important. Write down the different variables.

$$r = ? \quad Q_1 = 5 \mu\text{C} = 5 \times 10^{-6}\text{C} \quad Q_2 = -4 \mu\text{C} = -4 \times 10^{-6}\text{C}$$

$$F = 50 \text{ N} \quad k = 9 \times 10^9 \text{ N}\cdot\text{m}^2\cdot\text{C}^{-2}$$

$$-50 \text{ N} = \frac{9 \times 10^9 \times 5 \times 10^{-6} \times -4 \times 10^{-6}}{r^2}$$

$$r^2 = \frac{9 \times 10^9 \times 5 \times 10^{-6} \times 4 \times 10^{-6}}{50}$$

$$= 0,0036 \text{ m}^2$$

$$= 3,6 \times 10^{-3} \text{ m}^2$$

$$r = 6 \times 10^{-2} \text{ m, the distance between the two charge objects.}$$

Activity 1.1 Solving problems on Coulomb's Law

1.1.1 Each of two positively charged balls, 100 mm apart, experiences a force of 9 N. The distance between them is reduced to 50 mm. What is the magnitude of the force now experienced by each ball?

1.1.2 The force between two negatively charged balls is 4 N. The charge on each is doubled. What is the magnitude of the force experienced by each ball?

1.1.3 What must be the distance between point charge $q_1 = 26 \mu\text{C}$ and point charge $q_2 = -47 \mu\text{C}$ for the electrostatic force between them to have a magnitude of 5,70 N?

1.1.4 A cell membrane 10^{-8} m thick has positive ions on one side and negative ions on the other. What is the force between two ions with charges $+e$ and $-e$ at this separation?

1.1.5 In a NaCl molecule, a Na^+ ion is $2,3 \times 10^{-10}$ m from a Cl^- ion, with a charge of $-e$. What is the magnitude of the force between them?

Geography

PART ONE:

How to approach Paper 1 examination?

Managing your time:

Paper 1 is written for Three hours. Ensure that you spend 1 hour on each of the three questions.

The composition of the paper:

- The paper is divided into two sections, namely Section A and B.
- Each of these two sections consists of two questions.
- Answer three questions out of these four.
- Each of the four questions will start with two sets of short/ objective questions worth 10 marks each.

Each of the four questions will also include two paragraph/ short essay type questions of 6 marks each. These questions should not be answered in point form as they require analytical thinking and insight.

Ensure that you understand very clearly the meaning of instruction verbs in each question, for example:

- Account:** To explain by relating circumstances or giving reasons.
e.g. There is less rain in the interior of SA in winter because the air coming from the Kalahari High Pressure cell is cold and descending. This leads to sunny days with clear skies and cold nights and the formation of frost or fog.
- Compare and contrast:** To examine things to see how they are alike and how they differ.
e.g. Both commercial and subsistence farming deal with the planting of crops but the commercial farming is labour intensive, extensive and for profit making while subsistence farming is for family consumption.
- Define:** A precise clear meaning of a term or concept using words.
e.g. Isobars are lines joining places with the same pressure on a map.
- Describe:** Write about the main features of something. This should be done by expanding on a statement.

RURAL AND URBAN SETTLEMENTS PEOPLE AND THEIR NEEDS

QUESTION 4

- Choose the correct term/phrase from the word/phrase in brackets, which would make the sentence correct. Write down only the correct term/phrase next to the question number.
 - Urban settlements are regarded as (unifunctional/multifunctional).
 - A metropolis is (higher/lower) than a city in the urban hierarchy of settlements.
 - The (site/situation) of a settlement refers to the actual piece of land on which the settlement is placed.
 - An isolated rural settlement pattern has greater (social/economic) advantages than a nucleated rural settlement.
 - Rural development projects that are set up by the community are called (co-operative/grassroot) development projects. (5 x 2)(10)
- State whether the following are TRUE or FALSE. Only write down the question number and true or false.
 - A positive balance of trade is when the value of a country's imports is greater than the value of its exports.
 - The balance of payments includes a country's invisible imports and exports.
 - Tourists visiting South Africa is regarded as an invisible import.
 - Globalisation is the movement of ideas, goods and people between countries.
 - GDP per annum refers to the value of the goods produced and services performed by the permanent inhabitants of a country in one year. (5 x 2)(10)
- Refer to Figure 4.3 which shows the land use zones in Port Elizabeth and then answer the questions below:
 - What type of trade and transport town would this settlement be classified as? Motivate your answer. (2)
 - The CBD of a city is usually in the centre of the city. Suggest why this is not the case in Port Elizabeth. (1 x 2)(2)
 - List THREE functions that would be found in the CBD. (3)
 - Explain TWO reasons for the location of the industrial land use zone. (2 x 2)(4)
 - Give a reason for the location of Area B. (1)
 - Discuss how the RDP (Reconstruction and Development Programme) attempted to improve the quality of life for the people living in Area B. (4 x 2)(8)
 - The airport is located in the rural-urban fringe (Area C). Describe the characteristics of this land use zone. (3 x 2)(6)
 - Explain, giving ONE reason for each, the location of each of the residential areas 1, 2 and 3. (3 x 2)(6)
 - As a town planner, suggest where a regional shopping centre should be built. Give TWO reasons for your answer. (3 x 2)(6)

4.4 Read the extract below, which relates to the Coega Industrial Development Zone.

Coega: Gateway to the African renaissance [An advertisement for Coega]

Anyone who knows anything about international trade will tell you that Hong Kong, Singapore and Dubai are amongst the world's busiest ports.
South Africa will soon be part of this powerful group thanks to the benefits available at the Coega IDZ near Port Elizabeth.
It's the ideal location for export-orientated industries.
For a start there are no import duties so manufacturers can bring raw materials in at lowest cost. And because there are no export duties, they can send beneficiated goods out at the keenest prices. Transport costs are minimised, too, because Coega is right next door to South Africa's new deepwater port where state-of-the-art container handling will speed up distribution.
The proven combination of a duty-free industrial zone, purpose-built modern port and ready access to the rest of the world will result in competitive advantages for exporters.
Not to mention economic benefits for the people of the Eastern Cape. Or international trading opportunities for the entire sub-continent.
Welcome Coega.
Visit www.coega.com for further information.

e.g. Squatter settlement is a residential area that is often associated with poor living conditions and houses are mostly shacks and lack basic services such as water and sanitation.

5. **Distinguish:** Identify the characteristics that make two or more ideas, concepts or issues different

e.g. Air in a High is descending and circulating outwards in an anticlockwise direction while air in a Low is rising and spiralling inwards in a clockwise direction (in the southern hemisphere)

6. **Discuss:** Write about a feature, giving all information

e.g. The building of the Gautrain rail system will help a lot of commuters in Gauteng. The train will reduce/ ease traffic between Johannesburg, Pretoria and OR Tambo International Airport. In Johannesburg, the train will ferry passengers from OR Tambo International Airport to the surrounding centres such as Sandton, Rosebank and Jhb CBD. The train will save time for the economically active commuters as it will be travelling at speeds between 160 and 180 km/h. More private cars will be removed from the road through the use of this train between Jhb and Pretoria; especially on the N1. The frequency of six trains per hour will make them accessible to commuters and improve and promote the image of public transport in South Africa. The train will enhance tourism, promote economic development and urban restructuring in Gauteng.

7. **Explain:** Give a full reason, results or causes of a particular feature.

e.g. Tropical cyclones dissipate over the land because of the friction caused by objects on the land surface.

8. **Identify:** To single out from other information

e.g. The landform marked H is a mesa.

9. **List:** write a short or brief statement, term or word.

e.g. Crime and traffic congestion are some of the urban problems

10. **Justify:** Give a supportive statement for the answer you provided.

e.g. Eline is the fifth tropical cyclone to attack the area because tropical cyclones are named alphabetically in the order of occurrence during a specific season.

11. **Suggest:** Analyse a problem in a given situation and give possible reasons or ideas that can be plausible solutions.

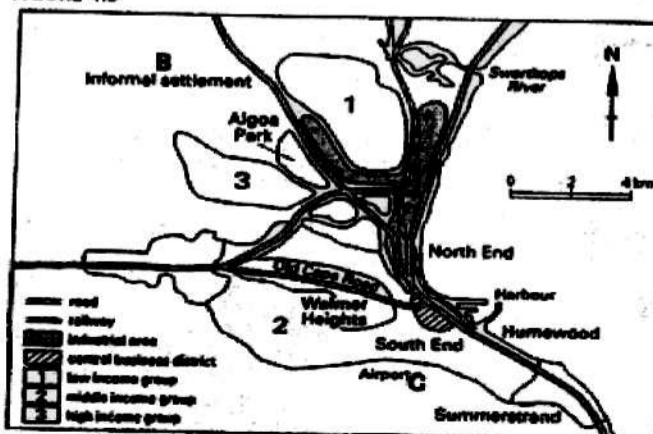
e.g. Factories can reduce air pollution by building high chimney stacks that release smoke into the higher layers of the atmosphere

12. **Name:** Similar to mention

e.g. South Atlantic High Pressure cell is found on the eastern side of SA.

- What is meant by the following:
 - export-orientated industries
 - beneficiated goods
 - container-handling (3 x 2)(6)
- In what ways is Coega an "ideal location for export-orientated industries"? (2 x 2)(4)
- State TWO advantages of Coega for manufacturers, stated in the advertisement (other than its location). (2)
- The main economic activities at Coega are industry and trade. Classify each of these activities as primary, secondary or tertiary economic activities. (2)
- Write a short paragraph explaining how the people of the Eastern Cape will benefit from the development of this IDZ. (4 x 2)(8)
- Suggest the meaning of the heading of the article. (1 x 2)(2)
- In January 2008, it was announced that a multi-billion rand aluminium smelter for Rio-Tinto-Alcan, an anchor tenant, was approved and that 150 skilled Canadians have arrived to help with its construction.
 - What do you understand by an anchor tenant? (2)
 - How will the arrival of 150 Canadians impact on the economy of the Eastern Cape? (2 x 2)(4)
- The Department of Minerals and Energy is investigating a strategy to use mealies or sugar cane as the main ingredient to produce bioethanol. However, Citizens United for Renewable Energy and Sustainability (CURES) is worried that: "... a strategy based on industrial agriculture will bring more environmental problems as well as increased food prices ..." (Annie Sugrue).
 - How is most of the power, used in industry, presently generated in South Africa? (1 x 2)(2)
 - Why is it important to investigate alternative methods to produce power? Give TWO reasons for your answer. (2 x 2)(4)
 - How would the use of mealies or sugar cane to produce bioethanol impact on food security? Explain your answer. (2 x 2)(4)
 - Where is the main maize-growing area in South Africa and where is the main sugar-growing area in South Africa? (2)(100)

FIGURE 4.3



[Source: Focus on Geography Grade 12 - J. Earle et al] QUESTION 1