



ZIMBABWE

**MINISTRY OF HIGHER AND TERTIARY EDUCATION,
INNOVATION, SCIENCE AND TECHNOLOGY
DEVELOPMENT**

**HIGHER EDUCATION EXAMINATIONS COUNCIL
(HEXCO)**

NATIONAL CERTIFICATE

IN

**MANAGEMENT AND BUSINESS STUDIES, FASHION, CLOTHING,
INFORMATION TECHNOLOGY, COSMETOLOGY**

SUBJECT: Work Place Communication PAPER NO: 310/22/M02

DURATION: 3 Hours

NOVEMBER/DECEMBER 2025 EXAMINATION

REQUIREMENTS

INSTRUCTIONS TO CANDIDATE

- 1) Answer all questions.
- 2) Start each answer on a fresh page.

This paper consists of 3 printed pages.

QUESTION 1: COMMUNICATION THEORY (20 MARKS)

- a) In the workplace environment communication is the backbone. Define the term communication. (2 marks)
- b) Provide three (3) functions of communication at the workplace. (3 marks)
- c) Citing examples explain the following forms of communication:
 - i) Non-verbal communication (3 marks)
 - ii) Small group communication (3 marks)
 - iii) Mass communication (3 marks)
 - iv) Channel of communication (3 marks)
 - v) Feed back in communication (3 marks)

QUESTION 2: ORAL AND WRITTEN COMMUNICATION (20 MARKS)

- a) At each workplace the Front Office manned by the Receptionist is unique. Outline five (5) skills of a good receptionist or etiquettes. (5 marks)
- b) Differentiate oral communication from written communication. (10 marks)
- c) Define barrier to effective communication and state four (4) types of them. (5 marks)

QUESTION 3: MEETINGS (20 MARKS)

In any organisational establishments, business meetings play major roles and are held regularly:

- a) Outline five (5) purposes of meetings. (5 marks)
- b) Provide five (5) duties of a chairperson in a formal meeting. (5 marks)
- c) In meetings certain terminologies are used. Explain the following terms:
 - i) Status quo (2 marks)
 - ii) Motion (2 marks)
 - iii) Ex-officio (2 marks)
 - iv) Intra-vires (2 marks)

v) Proxy

(2 marks)

QUESTION 4: BUSINESS LETTER (15 MARKS)

You are the Inventory Controller of Luton Motors (Pvt) Ltd a car spare parts and accessories company. One of your longtime customers bought spare parts for his buses worth \$25 000.000 on credit, but has not paid anything for six (6) months, despite telephone calls you made, statements and letters of reminder you sent before. Write a final letter of demand.

QUESTION 5: MEMORANDUM (15 MARKS)

You work for Rhinos Cargo (Pvt) Ltd a transport company and it has come to the notice of management that some drivers while they will be out on duty they are ferrying unauthorised goods and passengers presumably for an undisclosed fee which they pocket for personal uses. As the Transport Manager of the company write a memorandum to all drivers instructing them to stop such actions with immediate effect and the consequences which will follow in the event of non compliance.

QUESTION 6: LANGUAGE (10 MARKS)

a) Identify antonyms (opposites) of the following words:

- | | |
|--------------|----------|
| i) Abundant | (1 mark) |
| ii) Accept | (1 mark) |
| iii) Fail | (1 mark) |
| iv) Generous | (1 mark) |
| v) Present | (1 mark) |

b) Explore meanings of the following figuratives:

- | | |
|---|----------|
| i) To smell a rat | (1 mark) |
| ii) To be on cloud nine | (1 mark) |
| iii) Beating around the bush | (1 mark) |
| iv) Jumping from the frying pan into the fire | (1 mark) |
| v) Storm in tea cup | (1 mark) |

...../fk



ZIMBABWE

**MINISTRY OF HIGHER AND TERTIARY EDUCATION,
INNOVATION, SCIENCE AND TECHNOLOGY DEVELOPMENT**

**HIGHER EDUCATION EXAMINATIONS COUNCIL
(HEXCO)**

NATIONAL CERTIFICATE

IN

**MANAGEMENT STUDIES, BUSINESS STUDIES, FASHION,
CLOTHING, INFORMATION TECHNOLOGY, COSMETOLOGY**

MODULE: Workplace Communication

**PAPER NO: 310/22/M02
310/25/M02**

DURATION: 3 Hours

JUNE 2026 EXAMINATION

REQUIREMENTS

INSTRUCTIONS TO CANDIDATE

- 1. Answer all questions.**
- 2. Start each answer on a fresh page.**

This paper consists of 3 printed pages.

QUESTION 1: THEORY OF COMMUNICATION

(20marks)

- a) The science of communication at any workplace is inevitable. Outline five (5) purposes of communication at workplace. (5marks)
- b) Briefly explain with examples the following elements of the communication process:-
- i) Communicator (3marks)
 - ii) Message (3marks)
 - iii) Medium (3marks)
 - iv) Decoding (3marks)
 - v) Feedback (3marks)

QUESTION 2: BARRIERS TO EFFECTIVE COMMUNICATION

(20marks)

Barriers are anything that hinders the smooth flow of effective communication. Citing examples, define the following communication barriers:-

- i) Physical barriers (4marks)
- ii) Internal noise (4marks)
- iii) Semantic noise (4marks)
- iv) Cultural barrier (4marks)
- v) Language barrier (4marks)

QUESTION 3 : BUSINESS LETTER.

(15marks)

You are the Sales and Purchasing Manager at your company. You have received a letter of complaint from a customer about deliveries, of certain goods from your company.

The customer has complained that

- The goods were delivered a week after date of purchase.
- Some of the goods were damaged.

Write a letter of adjustment to the customer in response to the complaint raised.

QUESTION 4 : MEMORANDUM

(15marks)

Various departments at your company are obtaining quotations and making procurement commitments against the company policy which stipulate that, this has to be done by the Purchasing and Supplies office.

As the Procurement Manager, write a memorandum to all Heads of Departments reminding them of this regulation.

QUESTION 5 :MEETINGS

- a) The Students at your college would like to participate at a sporting event to be held in Masvingo in a month's time.
As the Sports Director, write a Notice and Agenda for the meeting to both staff and students. In your agenda include 4 new items as new business. (15marks)

- b) Explain the following meeting terms:

- i) Quorum (1marks)
- ii) In-camera (1mark)
- iii) Teller (1mark)
- iv) Majority (1mark)
- v) Minutes (1mark)

QUESTION 6 : LANGUAGE:

(10marks)

Simplify the following figurative to bring out their meanings.

- i) To be spoon fed. (2marks)
- ii) Water under the bridge. (2marks)
- iii) Looking for a needle in hay. (2marks)
- iv) A drop in an ocean. (2marks)
- v) To be under an eagles eye. (2marks)

.../dk



ZIMBABWE

**MINISTRY OF HIGHER AND TERTIARY EDUCATION,
INNOVATION, SCIENCE AND TECHNOLOGY
DEVELOPMENT**

**HIGHER EDUCATION EXAMINATIONS COUNCIL
(HEXCO)**

NATIONAL CERTIFICATE

IN

BUSINESS AND MANAGEMENT STUDIES

MODULE: Business Law 1

**PAPER NO: 310/22/M07
310/25/M07**

DURATION: 3 Hours

JUNE 2026 EXAMINATION

REQUIREMENTS

INSTRUCTIONS TO CANDIDATE

Answer any five (5) questions.

This paper consists of 2 printed pages.

QUESTION 1

- a) Describe any five purposes of law. (10 marks)
- b) Outline the five (5) principles of modern law in Zimbabwe. (10 marks)

QUESTION 2

Define delict and explain the requirements of a delict. (20 marks)

QUESTION 3

GM Investments advertised for the sale of beans at a reduced price. Sam went into the shop and purchased a packet of the beans. Five minutes later Sam entered the shop to purchase another packet of beans but the shopkeeper refused to sell to him. Sam believes he has the right to purchase the beans.

Discuss the legal principles involved and advise the parties. (20 marks)

QUESTION 4

Outline and explain ways of terminating an offer, giving examples. (20 marks)

QUESTION 5

Highlight and explain forms of breach of contract and the remedies available. (20 marks)

QUESTION 6

Discuss delegated legislation as a source of law in Zimbabwe. (20 marks)

QUESTION 7

- a) Define arbitration. (2 marks)
- b) Identify and explain the two (2) types of arbitration. (6 marks)
- c) Identify and explain any three (3) advantages and three (3) disadvantages of arbitration. (12 marks)

.../fem



ZIMBABWE

**MINISTRY OF HIGHER AND TERTIARY EDUCATION,
INNOVATION, SCIENCE AND TECHNOLOGY
DEVELOPMENT**

**HIGHER EDUCATION EXAMINATIONS COUNCIL
(HEXCO)**

NATIONAL CERTIFICATE

IN

BUSINESS STUDIES

MODULE: Financial Mathematics and Statistics 1 PAPER NO: 310/22/M05

DURATION: 3 Hours

NOVEMBER / DECEMBER 2025 EXAMINATION

REQUIREMENTS

- 1. Scientific calculator**
- 2. Graph paper**

INSTRUCTIONS TO CANDIDATE

- 1. Each question to start on a new page.**
- 2. Show all working.**
- 3. Answer all questions.**
- 4. List of formulae is attached at the back.**

This paper consists of 5 printed pages.

QUESTION 1

Solve the following equations:

- a) $9^x = 27$ (3 marks)
- b) $\log_3 (x + 1) = 4$ (4 marks)
- c) $4(x - 1) - 2(3x - 1) = 8$ (4 marks)
- d) $\frac{2x - 1}{5} - \frac{x + 3}{10} = 4$ (4 marks)

QUESTION 2

- a) Distinguish between trade discount and cash discount. (2 marks)
- b) A retailer orders goods at a catalogue price of \$1200. He is given a trade discount of 25% and a cash discount of 5%. Find the amount paid for the goods. (7 marks)
- c) The marked price of a cellphone is \$140 after a mark up of 25%.

Calculate:

- i) The cost price (3 marks)
- ii) The margin (3 marks)

QUESTION 3

- a) A man was awarded a 15% salary increase. If his previous salary was \$1048, calculate his new salary. (3 marks)
- b) A farmer bought a small lorry valued at \$7000 on Hire Purchase. At first he paid a certain amount as a deposit. The balance and interest of 20% p.a were paid off through 18 monthly of \$361,11 each. Find the deposit. (7 marks)

QUESTION 4

- a) Distinguish between Primary data and secondary data. (2 marks)
- b) The following are number of eggs sold in consecutive days by Muchaguta tuckshop.

13; 18; 13; 14; 13;
16; 14; 21; 13

Find;

- i) Mean (3 marks)
ii) Median (3 marks)
iii) Mode (1 mark)
iv) The range of data (2 marks)
- c) A student got the following marks in 4 tests given in the first semester: 65; 73; 52; x. His mean semester mark was 62. What was the fourth mark? (5 marks)

QUESTION 5

The data below show land distribution among families in Muchakata Resettlement area.

Plot size (Ha)	Number of families	Area allocated
0 - < 10	26	34
10 - < 20	14	40
20 - < 30	10	38
30 - < 40	7	42
40 - < 50	3	61

Draw a Lorenz Curve and comment. (14 marks)

QUESTION 6

- a) Define the following terms:
- i) Annuity (1 mark)
ii) Interest (1 mark)
- b) Calculate:
- i) The sum of money invested when \$2800 simple interest is earned in 4 years at 15% per annum. (4 marks)
ii) The value of an investment after 4 years if \$1 200 is invested at 12% per annum compounded semi-annually. (5 marks)
iii) The present value of an annuity of \$250 for 5 years at 6% per annum compounded quarterly. (6 marks)

QUESTION 7

- a) Mr Tsoko is planning to buy a house in 8 years time at a price of \$48 000. He has to start depositing a certain amount at the end of every month. If interest is 12% p.a compounded monthly, how much should he deposit monthly. (7 marks)
- b) Simple interest of \$60 000 was earned after investing \$300 000 for 4 years. Find the rate of interest. (6 marks)

LIST OF FORMULAE

$$F_v = P_v (1 + rt)$$

$$F_v = P_v (1 + r)^t$$

$$F_v = R \left[\left(1 + \frac{i}{i}\right)^n - 1 \right]$$

$$P_v = R \left[\frac{[1 - (1 + r)]^{-t}}{r} \right]$$

...../pm



ZIMBABWE

**MINISTRY OF HIGHER AND TERTIARY EDUCATION,
INNOVATION, SCIENCE AND TECHNOLOGY
DEVELOPMENT**

**HIGHER EDUCATION EXAMINATIONS COUNCIL
(HEXCO)**

NATIONAL CERTIFICATE

IN

BUSINESS STUDIES

SUBJECT: Business Law 1

PAPER NO: 310/22/M07

DURATION: 3 hours

NOVEMBER/DECEMBER 2025 EXAMINATION

REQUIREMENTS

INSTRUCTIONS TO CANDIDATE

Answer any five (5) questions

This paper consists of 3 printed pages.

QUESTION 1

Explain the following terms:

- a) Caveat subscripto rule
- b) Ex turpi causa rule
- c) Percuniary loss
- d) Unjust enrichment
- e) Postal rule

(20 marks)

QUESTION 2

- a) Explain the two types of arbitration.

(10 marks)

- b) Explain the two (2) types of delicts giving examples in both cases.

(10 marks)

QUESTION 3

Discuss five (5) functions of each of any two (2) arms of the state. (20 marks)

QUESTION 4

Discuss the law making process in Zimbabwe.

(20 marks)

QUESTION 5

Outline and explain ten (10) ways of terminating a contract.

(20 marks)

QUESTION 6

Discuss the civil and Criminal jurisdiction of the Village Court and High Court in Zimbabwe.

(20 marks)

QUESTION 7

Rudo aged 16 enrolled for NC marketing and paid fees for term 1 only. She attends lectures up to term two (2) and drops out. The college wishes to sue for fees due.

Discuss the legal principles and advise the college.

(20 marks)

.../fk



ZIMBABWE

**MINISTRY OF HIGHER AND TERTIARY EDUCATION,
INNOVATION, SCIENCE AND TECHNOLOGY
DEVELOPMENT**

**HIGHER EDUCATION EXAMINATIONS COUNCIL
(HEXCO)**

NATIONAL CERTIFICATE

IN

BUSINESS STUDIES

MODULE: Business Accounting 1

**PAPER NO: 310/22/M01
310/25/M01**

DURATION: 3 Hours

JUNE 2026 EXAMINATION

REQUIREMENTS

INSTRUCTIONS TO CANDIDATE

1. Answer all questions.
2. Show all relevant workings.
3. A silent non programmable calculator may be used.
4. Begin each answer to a new question on a fresh page.

This paper consists of 5 printed pages.

This paper consists of 2 printed pages.

QUESTION 1

The following trial balance was extracted from the books of Luis Palau. His year ends on the 31st of December.

Luis Palau: Trial balance as at 31 December 2022

Capital		75 000
Machinery at cost	60 000	
Premises at cost	40 000	
Motor vehicles at cost	20 000	
Accounts receivable and payable	20 000	18 000
Purchases and sales	175 000	350 000
Lighting and heating	7 300	
Rent and rates	5 000	
Bad debts	1 000	
Accumulated depreciation : Machinery		15 000
Motor vehicles		5 000
Discounts	1 500	3 000
Carriage inwards	5 000	
Carriage outwards	6 000	
Returns	15 000	10 000
Bank	30 000	
Inventory on 1 January 2022	50 000	
Salaries and wages	16 000	
Drawings	15 000	
Bank charges	1 500	
Commission received		2 000
General expenses	9 700	
	<u>478 000</u>	<u>478 000</u>

- Inventory on 31 December 2022 was valued at \$20 000.
- Rent and rates are prepaid by \$1000, salaries and wages are accrued by \$4500.
- Create a provision for bad debts at 5% of accounts receivable.
- Depreciate machinery at 10% on cost and motor vehicle at 5% using the reducing balance method.

Required:

Prepare a Statement of Comprehensive Income for the year ended 31 December 2022 and a Statement of Financial Position as at the same date.
(20 marks)

QUESTION 2

From the following details enter the sales, purchases, returns inwards and returns outwards journals.

- 2023
April 1. Credit sales to T. Matombo \$56, L Gwanya \$148 and K. Barure \$145.
3. Credit purchases from P. Bonde \$144 H. Harari \$25 B. Sengwe \$76.
7. Credit sales to K. Ketayi \$89, N. Minda 78, N Lunga \$257.
9. Credit Purchases from B. Pepukai \$24 H. Harari \$58, H. Mlilo \$123.
10. Goods returned by us to P. Bonde \$12 B. Sengwe \$22.
14. Goods returned to us by T. Matombo \$5 K. Barure \$11, K. Ketayi \$14.
17. Credit purchases from H. Harari \$54 B. Pepukai \$65, L Nani \$75.
20. Goods returned to B. Sengwe \$14.
24. Credit sales to K. Moyo \$57 k. Ketayi \$65 O. Garikayi \$112.
28. Goods returned to us by N Minda \$24.
31. Credit sales N. Lunga \$55.

(20 marks)

QUESTION 3

You are to record the following transactions in the ledger of M. Ndebele. Balance off the Ledger accounts and draw up a Trial Balance at the end of May.

- 2022 Started business with capital in Cash \$800 and \$2500 in the bank.
- May 1. 1. Bought goods on credit from T. Stores for \$610.
5. 5. Paid rent by cash \$200.
6. 6. Sold goods for cash \$700.
8. 8. Purchased goods paying by cheque \$200.
12. 12. Bought stationery \$300 paying by cash.
15. 15. Sold goods on credit to R. Parsely \$700.
20. 20. Paid wages and salaries by cheque \$200.
22. 22. We paid T. Storey in full and he gave us a discount of \$10.
30. 30. Bought more stationery on credit from F. Franklin for \$600.
- (20 marks)

QUESTION 4

Write up a cash book for the following transactions for the month of March 2022. Balance off the cash book at the end of March.

- March 1. Capital paid into the business cash \$3000 and bank \$5000
2. Paid electricity by cheque \$128.
 3. Bought goods by cash \$930.
 4. Received a cheque for rent \$350.
 5. Paid telephone by cash \$130.
 6. Deposited \$100 cash into the bank.
 7. Sold goods for cash \$700.
 8. Received a cheque from a debtor M. Gozo \$800.
 9. The following paid their accounts by cheque, Mary an account of \$200 less \$4 cash discount and James an account of \$400 less 5% discount by cheque.
 10. Paid wages by cheque \$350.
 11. Received a cheque for rent \$176.
 12. Paid insurance premium by cash \$75.
 13. The proprietor drew money from the bank for private use \$180.
 14. Withdrew \$200 cash from the bank for office use.
 15. Paid salaries in cash \$150 and used \$450 cash to pay school fees for the proprietor's child.
 16. Bought office furniture for \$3500 by cheque.
 17. Sold a piece of old furniture cash \$275.
 24. Paid sundry expenses by cheque \$82.

(20 marks)

QUESTION 5

State and explain any five (5) accounting concepts.

(20 marks)

...../pm



ZIMBABWE

**MINISTRY OF HIGHER AND TERTIARY EDUCATION,
INNOVATION, SCIENCE AND TECHNOLOGY
DEVELOPMENT**

**HIGHER EDUCATION EXAMINATIONS COUNCIL
(HEXCO)**

NATIONAL CERTIFICATE

IN

BUSINESS STUDIES

MODULE: Business Administration

PAPER NO: 310/25/M03

DURATION: 3 Hours

JUNE 2026 EXAMINATION

REQUIREMENTS

INSTRUCTIONS TO CANDIDATE

- 1. Answer any five (5) questions.**
- 2. All questions carry equal marks.**

This paper consists of 2 printed pages.

QUESTION 1

Explain any five (5) advantages of having a clear organisational structure. (20 marks)

QUESTION 2

Outline any five (5) roles of the employer in ensuring health and safety at the workplace. (20 marks)

QUESTION 3

Examine any five (5) methods of records disposal used in organisations. (20 marks)

QUESTION 4

Discuss any five (5) benefits of maintaining business records. (20 marks)

QUESTION 5

Discuss any five (5) principles of insurance. (20 marks)

QUESTION 6

Describe any five (5) methods of conducting job analysis. (20 marks)

QUESTION 7

Outline any five (5) examples of business documents. (20 marks)

...../pm



ZIMBABWE

**MINISTRY OF HIGHER AND TERTIARY EDUCATION,
INNOVATION, SCIENCE AND TECHNOLOGY
DEVELOPMENT**

**HIGHER EDUCATION EXAMINATIONS COUNCIL
(HEXCO)**

NATIONAL CERTIFICATE

IN

**BUSINESS AND MANAGEMENT STUDIES
(HUMAN RESOURCES MANAGEMENT, SALES AND MARKETING, TRANSPORT
AND LOGISTICS, HEALTH SERVICES MANAGEMENT)**

**MODULE: Business Computing and
Digital Literacy**

PAPER NO: 310/22/M04

DURATION: 3 Hours

JUNE 2023 EXAMINATION

REQUIREMENTS

Computer, Printer, Bond paper

INSTRUCTIONS TO CANDIDATE

- 1. Answer ALL Questions**
- 2. Your candidate number must appear on all the sheets**
- 3. Submit both hard copy and soft copy of your work**

This paper consists of 5 printed pages.

QUESTION 1

- a) Type the passage below, save and print a copy. (3 marks)

Management Levels.

Management level is a hierarchy within an organisation according to status or authority, from highest to lowest. The three typical levels are Top-level management, Middle-level management and Lower-level management. Higher levels have higher authorities, and so do their responsibilities to the organisation.

These levels determine how roles and tasks are distributed among the various managerial position, including to whom they are responsible and report and who they lead. In addition, each also focuses on different aspects of the organisational area. For example, top-level management are responsible for and make decisions for the entire company. Meanwhile middle-level managers focus on functional areas. And lower-level managers focus on routine work and supervising employees.

The key skills for position in top management are:

- Communication
- Leadership
- Change Management
- Emotional intelligence
- Delegation
- Strategic Thinking

Required

- b) Increase the font size of the main heading to 16, bold and double underlined. (3 marks)
- c) Put a drop cap to three lines on every first letter of each paragraph. (6 marks)
- d) Justify all the text (3 marks)
- e) Put the text in paragraph two into two columns with a line between. (2 marks)
- f) Put a watermark with your candidate number. (1 mark)
- g) Insert a footer with your coursename and a header with the text Management101. (2 marks)
- h) Insert a border on the whole page. (1 mark)

PAPER NO: 310/22/M04- BUSINESS COMPUTING AND DIGITAL LITERACY

- i) Change the dot bullet to Roman Numerals. (1 mark)
- j) Change the line spacing of the whole document to 1.5 line spacing. (2 marks)
- k) Save and print a copy. (1 mark)

QUESTION 2

- a) Reproduce the following worksheet. Save and print a copy. (6 marks)

Month	Sales \$	Costs \$	Profit \$	% profit
January	523	263	X	X
February	623	456	X	X
March	613	469	X	X
April	812	398	X	X
May	872	452	X	X
June	258	153	X	X
TOTAL			X	X

- b) Calculate the profit for each month. (3 marks)
- c) Calculate the total profit. (1 mark)
- d) The % Profit should be calculated as a function of the profit and the total profit figure. Format to zero decimal place. (4 marks)
- e) Above the table insert the title Bless Holdings. (1 mark)
- f) Insert borders on all the cells. (1 mark)
- g) Insert a pie chart representing the months and profit columns. Title it Financial Analysis and should be labelled clearly. (5 marks)
- h) Insert a footer with your candidate number. (1 mark)
- i) All your work should fit on one page. Save and print. (3 marks)

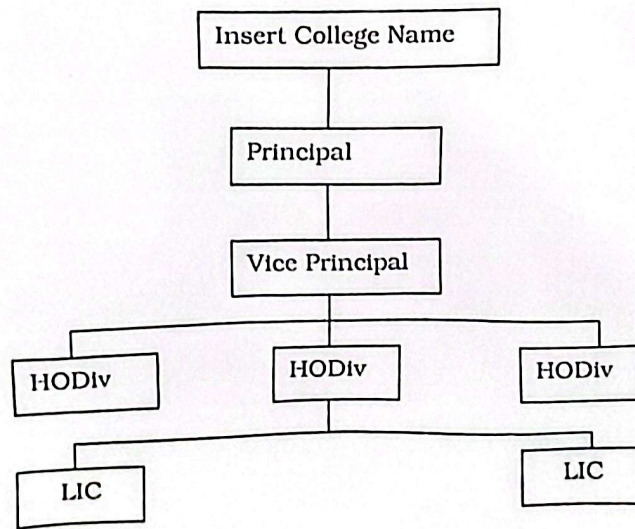
QUESTION 3

As a member of the Marketing team of your institution, you are required to prepare a presentation of the courses offered at your institution. The presentation should give the necessary information about the college.

The powerpoint presentation include (but not limited to) the following information;

PAPER NO: 310/22/M04- BUSINESS COMPUTING AND DIGITAL LITERACY

- a) Slide 1
The slide should show college name and the subject matter being presented.
(3 marks)
- b) Slide 2
The slide should show the courses offered in a two column table, bulleted and italicised.
(4 marks)
- c) Slide 3
The slide should show the organogram below;



(8 marks)

- d) Slide 4
The slide should be a Title Only Template that has a complementary statement of your choice which is being addressed to the audience.
(4 marks)
- e) Insert your candidate number as a footer on all the slides. (4 marks)
- f) Save and print a copy. (2 marks)



ZIMBABWE

**MINISTRY OF HIGHER AND TERTIARY EDUCATION,
INNOVATION, SCIENCE AND TECHNOLOGY
DEVELOPMENT**

**HIGHER EDUCATION EXAMINATIONS COUNCIL
(HEXCO)**

NATIONAL CERTIFICATE

IN

BUSINESS AND MANAGEMENT STUDIES

SUBJECT: Business Mathematics and Statistics PAPER NO: 310/19/S03

DURATION: 3 Hours

MARCH/APRIL 2023 EXAMINATION

REQUIREMENTS

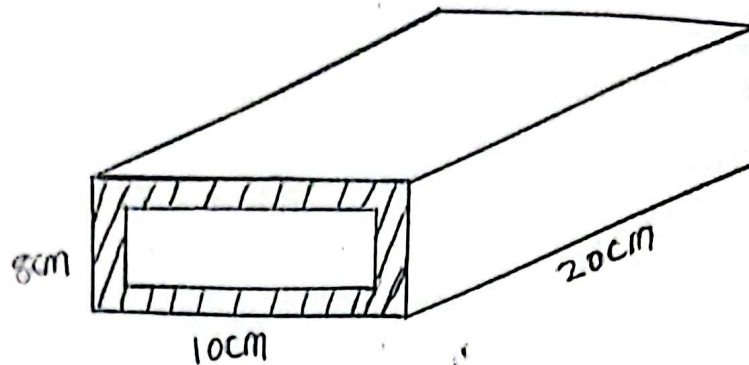
1. Scientific calculator.
2. Graph paper.

INSTRUCTIONS TO CANDIDATE

1. Answer all questions.
2. Show all workings.

This paper consists of 4 printed pages.

QUESTION 1



The metal sleeve above is of length 20cm and has a rectangular cross-section of sides 8cm by 10cm. It is made of metal of uniform thickness of 1cm. Find:

- a) the shaded area of the cross-section (4 marks)
- b) the volume of the metal in the sleeve (2 marks)

QUESTION 2

- a) Simplify

i) $-2^0 \times (-2)^3$ (2 marks)

ii) $8^{\frac{-2}{3}}$ (3 marks)

iii) $\frac{\log 2 - \log 3}{\log 8 - \log 27}$ (4 marks)

- b) Use logarithms to evaluate:

$\frac{14,4 \times 5,2^3}{5,4}$ (6 marks)

QUESTION 3

Solve the following equations:

a) $(x - 5)(x + 2) = 0$ (3 marks)

b) $\frac{2}{y-1} = \frac{3}{2y+4}$ (4 marks)

c) $\begin{aligned} x + y &= 2 \\ x^2 - y^2 &= 12 \end{aligned}$ (5 marks)

QUESTION 4

- a) i) State the three (3) measures of central tendency. (3 marks)
- ii) Give one (1) advantage and two (2) disadvantages of using a pie chart. (3 marks)
- b) The table below shows the ages of students in an NC Accountancy class.

Age	20	21	22	23	24
Frequency	1	3	7	4	4

Find:

- i) Mean (4 marks)
- ii) Median (2 marks)
- iii) Mode (1 mark)

QUESTION 5

A man's normal working hours were 45 hours. His overtime was 12 hours paid at time and a half. If his hourly rate of pay was \$1.30, calculate his gross pay. (6 marks)

QUESTION 6

- a) Define:
- i) Sample (2 marks)
- ii) Probability (2 marks)
- b) In one of the Government Departments, 30% of its employees use the Public Service bus to travel to work and 60% of its employees are female. It is assumed that the two characteristics are independent.
- i) Construct a tree diagram to illustrate the above information. (3 marks)

Using the tree diagram above, find the probability that an employee picked at random will be:

- ii) Male and does not use the Public Service bus (2 marks)
- iii) Uses the Public Service bus (4 marks)

QUESTION 7

Chimuti Polytechnic revealed the following information concerning its 50 candidates who sat for HEXCO examinations in Basic Accounts and Introduction to Law.

40 passed Basic Accounts
30 passed Introduction to Law

- a) Given that 5 passed none of the three subjects, show the given information in a Venn diagram. (4 marks)
- b) Use the Venn diagram above to find the number of students who passed:
- i) Both subjects (3 marks)
 - ii) Basic Accounts only (2 marks)
 - iii) Introduction to Law only (2 marks)

QUESTION 8

The table below shows the distribution of income amongst the employees of Musa Factory in 2015.

Income Range	Number of employees	Income (\$000)
2000 - < 4000	52	90
4000 - < 6000	14	50
6000 - < 8000	18	100
8000 - < 10 000	4	200
10 000 - < 12 000	6	420

- a) Analyse this data using a Lorenz curve and comment on the distribution. (11 marks)
- b) List any four (4) other situations in which data may be analysed using a Lorenz curve. (4 marks)

QUESTION 9

Mr Moyo bought a television set marked \$1200 on hire purchase. The hire purchase terms were that he pays a deposit of \$600 and the balance and interest to be paid in equal monthly instalments over 3 years. Interest was charged at 20% per annum. Calculate:

- a) The monthly instalment (7 marks)
- b) Hire purchase price (2 marks)

...../pm