

EXAMINATION NO. \_\_\_\_\_



**2014 EXAMINATIONS**

**CERTIFICATE IN FINANCIAL ACCOUNTING PROGRAMME**

**PAPER FA 2: PRACTICAL MATHEMATICS & COMPUTING**

**TUESDAY 9 DECEMBER 2014**

**TIME ALLOWED: 3 HOURS  
9.00 AM - 12.00 NOON**

**INSTRUCTIONS: -**

1. You are allowed **15 minutes** reading time **before the examination begins** during which you should read the question paper and, if you wish, make annotations on the question paper. However, you are **not** allowed, **under any circumstances**, to open the answer book and start writing or use your calculator during this reading time.
2. Number of questions on paper – 7.
3. Answer **ALL** questions in **Section A** and any **TWO** questions in Section B.
4. Marks for each question are indicated.
5. Use of programmable calculators is **NOT** allowed.
6. **All workings must be clearly shown.**
7. Begin **each** answer on a fresh page.
8. This question paper must **NOT** be removed from the examination hall.
9. **DO NOT OPEN THIS PAPER UNTIL YOU ARE INSTRUCTED BY THE INVIGILATOR.**

This question paper contains 4 pages

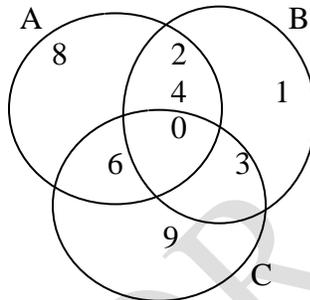
**SECTION A****Answer ALL questions in this section**

1. (a) Convert the binary number 10110101 to hexadecimal. Show your workings. **2 Marks**
- (b) A rectangular fish pond is 12.4m long, 9.73m wide and 4.8m deep.

**Required:**

If each fish requires  $153\text{cm}^3$ , calculate the number of fish that would fill the pond. Give your answer correct to the nearest whole number. **5 Marks**

- (c) Discuss the following venn diagram with respect to intersection and union.



**8 Marks**  
**(TOTAL : 15 MARKS)**

2. (a) Make a sketch of the straight line  $y = 4x - 2$ .

**Required:**

Find the coordinates and the point of intersection on the graph where the line intersects.

- (i) the  $y$  axis **3 Marks**
- (ii) the  $x$  axis **3 Marks**
- (iii)  $y = 2$  **3 Marks**
- (b) Mary bought 1,800 kg of tea. She sold  $\frac{1}{3}$  of the tea on Monday,  $\frac{1}{4}$  on Tuesday and  $\frac{1}{5}$  on Wednesday.

**Required:**

How much tea (in kg) is still unsold?

**6 Marks**  
**(TOTAL : 15 MARKS)**

**Continued/.....**

3. (a) The probability that a person has blood type A is 0.3. Two persons are selected at random. Find the probability that:
- (i) the first person has blood type A and the second person has blood type A. **2 Marks**
  - (ii) neither person has blood type A. **2 Marks**
- (b) (i) Define the following terms in relation to computer security:
- (1) firewall **2 Marks**
  - (2) hacking **2 Marks**
  - (3) spoofing **2 Marks**
  - (4) malware **2 Marks**
- (ii) State **three** critical components needed to establish a computer network at a workplace. **3 Marks**  
**(TOTAL : 15 MARKS)**
4. (a) Joseph borrowed K100,000 from NBS Bank at monthly compound interest of 1.5%.
- Required:**
- (i) How much will he repay if the loan is called in after two years? **3 Marks**
  - (ii) If he repaid K50,000 after two years, how much will he repay at the end of one further year if the monthly rate of compound interest falls to 1% in the third year. **4 Marks**
- (b) Define the following terms in relation to a computer system:
- (i) hardware **2 Marks**
  - (ii) firmware **2 Marks**
- (c) Define an internet service provider (ISP). Give **two** examples of ISPs in Malawi. **4 Marks**  
**(TOTAL : 15 MARKS)**

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**SECTION B****Answer any TWO Questions ONLY from this section**

5. (a) Define the following types of events:
- (i) non mutually exclusive, **2 Marks**
- (ii) independent. **1 Mark**
- (b) If the average marks for 15 CFA students is 55.0 and the marks for 14 students are 65, 40, 75, 30, 60, 62, 70, 45, 55, 50, 35, 57, 72, 44
- Required:**
- (i) Find the marks for the 15<sup>th</sup> student. **4 Marks**
- (ii) Find the mode. **1 Mark**
- (c) Petrol costs K750 per litre. Jacob is planning a 318km trip. His car has a 50 litre petrol tank and it uses 1 litre to cover 20km. His average speed on the trip will be 90km/hr.
- Required:**
- (i) How much (in K wacha) will it cost him to buy petrol for the trip? **4 Marks**
- (ii) How long will the trip take in hours and minutes? **3 Marks**
- (iii) What will be the consumption rate of petrol (in litres per minute)? **3 Marks**
- (iv) How much petrol will be left at the end of the trip if Jacob fills the tank before he leaves? **2 Marks**
- (TOTAL : 20 MARKS)**

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6. Wawa Mining Company is considering setting up an extraction facility to mine a rare metal at Chagwa. They have to remove the earth before mining can begin, at a cost of K1.5 million now and K0.9 million next year.

Once mining begins, it will bring in estimated revenues as indicated in the following schedule:

1 <sup>st</sup> year of operation	K1.0m
2 <sup>nd</sup> year	K0.9m
3 <sup>rd</sup> year	K0.9m
4 <sup>th</sup> year	K0.7m

At the end of year 5, Wawa will have to pay K0.1m to reclaim the land (i.e. cover up the mine pit and plant trees. If Wawa's cost of capital is 12% per annum:

**Required:**

- (a) Calculate the net present value (NPV) of the project. **16 Marks**
- (b) Advise Wawa whether to set up the mining project or not. **4 Marks**  
**(TOTAL : 20 MARKS)**
7. (a) The management of Yanga manufacturing company are intending to update its clerical procedures with the introduction of an office automation system (electronic office).
- Required:**
- Describe any **five** hardware and software components that makeup "the electronic office". **10 Marks**
- (b) Mention any **five** ways in which the email, as a mode of communication, has impacted on work practices. **10 Marks**  
**(TOTAL : 20 MARKS)**

**E N D**