

QUANTITATIVE TECHNIQUES – PAPER 5

1.0 General Performance

- There is a remarkable improvement in performance with the percentage pass being 52.47% compared to 39.23% in the December 2010 examinations diet.
- The quality of the answers presented by recently registered candidates was much better than in the December 2010 examinations diet.
- Most poorly attempted questions were 2, 6 and 7; question 2 was least attempted
- In most cases the majority of candidates answered only some parts of the questions.
- Candidates should adhere to the formulae and tables provided at the end of the question papers, failure to do so leads to loss of marks.
- Candidates should note that it is absurd to make reference to the work which is not attached or not really done.
- Candidates should learn to identify the key words or terms used in each question in order to answer the questions appropriately.

2.0 PERFORMANCE IN INDIVIDUAL QUESTIONS

2.1 Question 1:

- This question tested the concept of measures of location and variance.
- It required candidates to: (a) explain the terms: (i) central tendency (ii) variation, (b) distinguish between a (i) small and large sample (ii) statistic and parameter., (c) find (i) sample variance and (ii) sample standard deviation.
- The question was very popular and many candidates scored high marks.
- A few candidates, though, failed to define events and could not use sample formulae to calculate variance and standard deviation of a sample.
- Candidates are advised to pay specific attention to basic definitions of terms and interpretation of formulae, and be able to identify and distinguish formulae to use for sample and population calculations.

2.2 Question 2 :

- This question tested mainly the concept of probability.
- it required candidates to: (a) define the following events: (i) null, (ii) definite and (iii) mutually exclusive, (b) compute probabilities, (c) (i) list characteristics of a normal distribution curve, and (ii).find the percentage of expected value
- It was the most unpopular and least attempted question, and the majority of candidates who attempted this question scored low marks.
- Probability questions have for long been of a challenge to many candidates.
- Candidates are advised not to ignore this topic and should revise it thoroughly.

2.3 Question 3:

- This question tested mainly the concepts; time series and correlation.
- It required candidates to: (a) (i) define the term 'forecasting', (ii) state three types of forecasts, (b) (i) compute Spearman's correlation coefficient, (ii) test the level of significance at 5%
- Many candidates who attempted this question were unable to answer parts (a) (ii) and (b) (ii)
- The majority of candidates tried to calculate Spearman's correlation coefficient but some failed to rank the values as expected.
- Candidates need to fully learn how to state the null and alternative hypotheses, compute using the formula for level of significance provided and interpret results obtained from such computations

2.4 Question 4:

- This question tested the concept of interpolation and regression.
- It required candidates to: (a) differentiate between interpolation and extrapolation, (b) use interpolation method to find values of y and x from a table of values, (c) (i) find regression equation by least squares method, (ii) use regression equation to predict sales at a given expenditure.
- The majority of candidates who attempted this question could not answer fully parts (a) and (b)
- Candidates still need to distinguish between interpolation and extrapolation and to apply the interpolation method to find required values using data provided.

2.5 Question 5:

- This question tested the concept of time series, index numbers and normal distribution
- It required candidates to: (a) define the terms : (i) time series, (ii) trend and seasonality, (b) (i) compute import index, (ii) interpret the results; (c) use a normal distribution table to obtain the value to use to find departure time.
- It was a very popular question and the majority of candidates who attempted it scored high marks in part (b). Parts (a) and (c) were, however, poorly answered; some candidates could not define the term seasonality in part (a) and to interpret part (c) correctly.
- Candidate should revise terms and concepts as applied in quantitative techniques but not as defined in other subject disciplines.

2.6 Question 6:

- Required candidates to: (a) define the terms: (i) objective function, (ii) shadow price, (iii) feasible region and (iv) optimal solution, (b) maximise a cost function using the constraints provided, (c) find: (i) price function, (ii) total revenue functions, and (iii) the profit maximising output from the demand and cost functions.
- It was not popular question and the majority of the candidates scored low marks. A few candidates who attempted this question lacked graphical skills to plot the needed constraints and knowledge of differential calculus needed to find the profit maximising output.
- Candidates need to be exposed to cost, price profit and revenue functions and the application of calculus in their functions. Candidates who attempted to solve the simultaneous inequalities and those who tried to use simplex tableau method could not work out the solution to the end.
- Candidates are advised not to ignore any part of the syllabus. They should endeavour to learn how to solve linear programming problems using both graphical and simplex tableau methods, and to formulate cost, price, profit and revenue functions.

2.7 Question 7:

- Required candidates to: (a) define the terms (i) Gantt chart, (ii) network; (b) (i) define the word quality; (ii) state four types of control charts; (c) draw a network for the project; and (d) test the level of significance at 5%.
- Candidates were able to answer part (c) correctly but could not state the four control charts and use them to test the level of significance.
- Candidates were also not familiar with control charts and hypothesis testing hence could not give the required answers in parts (b). and (d)
- Candidates should balance their efforts in revising both discursive and calculation parts.