CPA ADVANCD LEVEL

PRACTICAL PAPER NO. CA 35P: BUSINESS AND DATA ANALYTICS (COMPUTER-BASED EXAMINATION).

NOTIONAL HOURS: 240

Recommended tool: Excel, R

UNIT DESCRIPTION

This course is aimed at enabling the candidate to use information technology to support decision making through business analytics. The candidate is expected to demonstrate digital competency in preparation and analysis of financial statements, forecasting and related areas in data analytics.

PREREQUISITE

To attempt this paper, a candidate shall be required to have passed all other examination papers within the CPA qualification.

Candidates will be required to have core knowledge of quantitative techniques, financial accounting and reporting and financial management. Candidates are also expected to have knowledge in their specialisation areas of management accounting, audit, tax and public financial management.

The paper will be attempted over three hours in a controlled, computerized environment (examination centres with computer laboratories).

1.0   LEARNING OUTCOMES

A candidate who passes this paper should be able to:

-   Discuss fundamental aspects of big data and data analytics from the CRISP (cross-industry standard process for data mining**)** framework, data visualisation and emerging issues.

-   Apply data analytics in preparation of financial statements, financial statements analysis and forecasting, carrying out sensitivity/scenario analysis and presenting financial data and metrics using dashboards.

-   Apply data analytics in financial management principles that include time value of money analysis, evaluate capital projects, carry out sensitivity/scenario analysis and present information using dash boards.

-   Apply data analytics in management accounting to estimate product costs, breakeven analysis, budget preparation, sensitivity/scenario analysis and flexible budgets.

-   Apply data analytics in auditing techniques including key financial trends, fraud detection, tests of control, model reviews and validation issues.

-   Apply data analytics in estimating tax payable and in public sector financial management.

CONTENT

1.0 Introduction to Excel

- Utilising the keyboard shortcuts in Excel

- Conducting data analysis using data tables, pivot tables and other common functions

- Using advanced formulas and functions to enhance the functionality of financial models

2.0 Introduction to data analytics

2.1 The CRISP (cross-industry standard process for data mining) framework for data analytics

- Data concepts - conceptual, logical, physical data models

- Stages in data lifecycle: identifying data sources, modeling data requirements, obtaining data, recording data, using data for making business decision, removing data

2.2 Big data and data analytics

- Definition of big data

- The 5Vs of big data

- Types of data analytics: descriptive analytics, prescriptive analytics and predictive analytics

2.3 Tools for data analytics

- Data cleaning tools (Alteryx, SSIS, Datastage, others)

- Data Management (Storage/DBA): SQL, Oracle, Cloud Computing (AWS,AZURE), others

- Reporting/Visualization : Excel, PowerBI, Tableau, Microstrategy, others

2.4 Data visualization in Excel

- Definition of data visualization

- Benefits of data visualization

- Types of visualization; comparison, composition and relationships

- Qualities of good data visualization

3.0 Core application of data analytics

3.1 Financial accounting and reporting

- Prepare financial statements; statement of profit or loss, statement of financial position and statement of cash flow for companies and groups

- Analyse financial statements using ratios, common size statements, trend and cross-sectional analysis, graphs and charts

- Prepare forecast financial statements under specified assumptions
- Carry out sensitivity analysis and scenario analysis on the forecast financial statements
- Data visualization and dash boards for reporting

3.2 Financial Management

- Time value of money analysis for different types of cash flows
- Loan amortization schedules
- Project evaluation techniques using net present value - (NPV), internal rate of return (IRR)
- Carry out sensitivity analysis and scenario analysis in project evaluation
- Data visualisation and dashboards

4.0 Application of data analytics in specialised areas
4.1 Management accounting

- Estimate cost of products (goods and services) using high-low and regression analysis method
- Estimate price, revenue and profit margins
- Carry out break-even analysis
- Budget preparation and analysis (including variances)
- Carry out sensitivity analysis and scenario analysis and prepare flexible budgets

4.2 Auditing

- Analysis of trends in key financial statements components
- Carry out 3-way order matching
- Fraud detection
- Test controls (specifically segregation of duties) by identifying combinations of users involved in processing transactions
- Carry out audit sampling from large data set
- Model review and validation issues

4.3 Taxation and public financial management

- Compute tax payable for individuals and companies
- Prepare wear and tear deduction schedules
- Analyse public sector financial statements using analytical tools
- Budget preparation and analysis (including variances)
- Analysis of both public debt and revenue in both county and national

government

- Data visualisation and reporting in the public sector

5.0 Emerging issues in data analytics
- Skepticism and challenges in data analytics
- Ethical issues in data analytics
- Data Security / Data Protection
- Performance (Limitations within analytic tools)

The recommended study and reading materials will be shared in the final version of the syllabus.