DEPARTMENT OF SCIENCE EDUCATION
FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA, NIGERIA
SECOND SEMESTER

Full Title of Examination: Bachelor's Degree (B.Tech.) **Level**: 300
Course Code: EDU **No. of Credit**:3
Course Title: Research Methodology & Data Processing
Date: September, 2015 **Duration of Exam.**: 3Hours
Course Lecturer: Asso. Prof. Dr. Gambari, A. I. & Prof. Mrs. V. I. Ezenwa

Instruction to Candidates: Answer **All Questions** in Section 'A' and any **TWO** Questions in Section 'B'

SECTION A

1. Research implies the following EXCEPT:
(A) an empirical investigation into a problem and a systematic process of problem solving
(B) an inquiry into the unknown and a search for new knowledge
(C) a scientific approach to solving problem and a logical system of investigating problems
(D) an attempt to create new problems in order to provide new ideas or knowledge

2. Literature review serves the following purposes EXCEPT:
(a) eliminate duplication of what has been done already;
(b) guide your formulation of research hypotheses or questions;
(c) sharpen your focus of the study
(d) point out the solution to problems of your study

3. The type of research conducted for the purpose of applying or testing, theory and evaluating its usefulness in solving educational problems is known as:
(A) Action Research
(B) Historical research
(C) Applied Research
(D) Evaluation Research

4. A research where independent variables are manipulated to observe the effects on the dependent variables is called.....
(A) Research and Development
(B) Experimental Research
(C) Evaluation Research
(D) Survey Research

5. Descriptive Research includes the following EXCEPT:
(A) Applied Research
(B) Surveys
(C) Documentary Analysis
(D) Case Studies

6. A kind of research where questionnaires, checklists, rating scales, score cards, inventories, and interview are used for data collection is known as.....
(A) Case Studies
(B) Applied Research
(C) Surveys
(D) Documentary Analysis

7. When you are investigating relationships between academic achievement and one or more other variables of interest such as Social Economic Status of Parents, you are dealing with.....
(A) Experimental Research
(B) Historical Research
(C) Longitudinal Research
(D) Correlation Research

8. The following are the conditions that can necessitate an individual studying an already studied problem include the following EXCEPT:
(A) Getting a Research grant
(B) Effect of time span, or trying different geographical area;
(C) Sample differential, or different target population;
(D) Adoption of new design, or application of different technique for data collection

9. The following are some of the qualities of a researchable topic EXCEPT:
(A) Clear and Logical
(B) Workable and Achievable for a long period of time
(C) Focus and Sharp
(D) Short and not Cumbersome

10. A page specially left for you to devote the work to a person or group of persons is called.....
(A) Devotion page
(B) Dedication Page
(C) Acknowledgment Page
(D) Table of Contents

11. A portion of research that shows an overview of the intention of the study as contained in the research title and its breakdown in specific terms is called.....
(A) Statement of the Problem
(B) Research Hypotheses
(C) Aim and Objectives of the study
(D) Background of the Study

12. The major questions which you seek to answer through the study come under .....
(A) Research hypotheses
(B) Research Questions
(C) Scope of the Study
(D) Significance of the Study

13. A systematic study of all existing works that are relevant to the research work is called...
(A) Research Method
(B) Literature Review
(C) Research Hypothesis
(D) Research Question

14. When the reviewer restates the passages in his own words this is called.....
(A) Paraphrase
(B) Citation
(C) Reference
(D) Acknowledgement

15. In signal phrase citation, the name of authors should be joined with .....
(A) and
(B) , (comma)
(C) ; (semi colon)
(D) : (colon)

16. If the date of publication is not provided, use the abbreviation.....
(A) "d.n" (date not)
(B) "d.n.g" (date not given)
(C) "n.d." ("no date").
(D) "d.n.p" (date not provided)

17. When several works are cited in parenthetical form, it should be .....
(A) Chronologically arranged
(B) Systematically arranged
(C) Ascending orderly arranged
(D) Descending orderly arranged

18. If you want to make reference to more than one publication of an author for the same year, you have to use the .....
(A) figures (1, 2, 3, 4 etc)
(B) letters (a, b, c, d etc)
(C) roman figure letters (i, ii, iii, iv etc)
(D) capital letters (A, B, C, D etc)

19. The difference between True and Quasi experimental designs is the:
(A) use of statistical tool
(B) lack of random assignment of subject to conditions.
(C) ability of researcher to control the internal validity
(D) ability of researcher to control the internal validity

20. Cohort Designs include the following EXCEPT:
(A) Pretest Cohort Design
(B) Posttest Cohort Design;
(C) Partitioned Posttest Only Cohort Design;
(D) Pre-treatment Post-treatment Cohort Designs

28. The following are types of Validity EXCEPT:
(A) Face Validity
(B) Content Validity
(C) Construct Validity
(D) Conditional Related Validity

29. Types of Reliability include the following EXCEPT
(A) test-retest,
(B) equivalent form,
(C) internal consistency
(D) external consistency

30. When you are suppose to reject a hypothesis and you accept it, you commit a .....
(A) Type I Error
(B) Type II Error
(C) Types III Error
(D) Type IV Error

31. A statistical test used to determine if the scores of two groups differ on a single variable is referred to as .....
(A) One-way ANOVA
(B) t-test
(C) Chi-square
(D) Kruska Wallis Test

32. A graphical display of a distribution of events that appears as a symmetrical bell-shaped curve wherein the values for the mean, median, and mode are identical is called .....
(A) Abnormal Distribution Curve
(B) Normal Distribution Curve
(C) Irregular Distribution Curve
(D) Distribution Curve

33. The factors which are controlled by experimenter to cancel out or neutralise any effect it might otherwise have on the observed phenomenon is referred to as.....
(A) Extraneous variable
(B) Control variable
(C) Intervening variable
(D) Moderator variable

34. The factor which theoretically affects the observed phenomenon but cannot be seen, measured or manipulated is called.....
(A) Moderator variable
(B) Extraneous variable
(C) Control variable
(D) Intervening variable

Scores From 'B' Group

20, 25, 29, 29, 30, 35, 36, 29, 40, 41, 48, 49, 55, 55, 55, 55, 57, 57, 57, 57, 60, 61, 62, 68, 70.

Use the data to test the null hypothesis that there is no significant difference between the mean score of the students taught by Lecture A and the mean score of students taught by Lecturer B, ($\alpha = 0.05$) **(10 Marks)**

In a certain experiment, three different cooperative learning strategies namely (i) Jigsaw, (ii) STAD, and (iii) TAI were employed for teaching SS I physics students in Minna Metropolis. It is hypothesized that there is no significant difference between the three different groups in terms of their achievement after six weeks treatment.

Jigsaw Group	STAD Group	TAI Group
3	6	2
5	8	3
6	7	2
3	5	4

Use the data to test the null hypothesis that there is no difference in the effect of the three approaches, ($\alpha = 0.05$) **(10 Marks)**

An opinion poll has resulted in the following data showing the most preferable TV programmes among 500 men and women.

Sex	Music	Science	Film	Sports
Male	50	80	50	100
Female	50	30	90	50

Use the level of significance $\alpha=0.05$ to verify the hypothesis that the program choice is independent of sex. H_0: The programme choice does not depend on sex.

A technical teacher wishes to evaluate the effect of two methods of teaching Orthographic drawing (American Method (A) and English Method (B)). Two groups were randomly assigned to students drawn from the same population (SS 3 students). The students were 24 in number, 12 for method A and 12 for method B.

Null Hypothesis Proposed: There is no significant difference between the performance of the students taught with method B. The Mann-Whitney test was used to test the null hypothesis at the 0.05 level of significance.

After a period of one month exposure to the two methods, the scores of the students on a standardized achievement test were recorded. The performance scores of students taught by A methods and taught by B method are as shown below.

A Method: 68, 79, 85, 78, 88, 80, 95, 97, 52, 63, 75, 82, 94, 89, 60, 50, 77, 83, 64, 45.
B method: 73, 55, 61, 71, 74, 87, 67, 70, 47, 51, 95, 78, 90, 49, 86, 81, 86, 48, 58, 91.
Use the level of significance $\alpha=0.05$ to verify the hypothesis. **(10 Marks)**

BEST OF LUCK