



MOSHOOD ABIOLA POLYTECHNIC

ABEOKUTA, OGUN STATE.

DEPARTMENT OF STATISTICS & MATHEMATICS

1ST SEMESTER EXAMINATION

2022/2023 SESSION

COURSE TITLE: STATISTICS FOR COMPUTING I

COURSE CODE: COM 114

LEVEL: ND I COMP SCI. (FT/PT)

UNIT: 2

TIME ALLOWED: 2Hrs

INSTRUCTION(s): (i) Write **ONLY** your Matriculation Number on this question paper and nothing else
(ii) Answer any **FOUR (4)** Questions

1. (a) Three groups of children contain respectively 3 girls and 1 boy; 2 girls and 2 boys; 1 girl and 3 boys. One child is selected at random from each group. Shows that the chance that the three selected consist of 1 girl and 2 boys is $\frac{13}{32}$.

(b) Explain the following sampling techniques

- i. Simple Random Sampling
- ii. Quota Sampling
- iii. Multi-Stage Sampling
- iv. Systematic Sampling
- v. Purposive Sampling

2. (a) Describe briefly the Law of Statistical Regularity and state its application with example.

(b) Two vacuum cleaner salesmen A and B must each make two calls per day, one in the morning and afternoon. A has probability 0.4 of selling a cleaner on any call, while B (a novice) has probability 0.1 of a sale. A works independently of B and, for each salesman, morning and afternoon results are independently of each other. Find the probability that, in one day:

- i. A sells two cleaners;
- ii. A sells just one cleaner;
- iii. B makes at least one sale;
- iv. Between them, A and B make exactly one sale.

3. (a) State and Explain the level of measurement scales

(b) A team of 5 is to be chosen from 4 men and 5 women to work on a special project.

- i. In how many ways can the team be chosen?
- ii. In how many ways can the team be chosen to include just 3 women?
- iii. What is the probability that the team includes just 3 women?
- iv. What is the probability that the team includes at least 3 women?
- v. What is the probability that the team includes more men than women?

STATISTICS AND MATHEMATICS

4. (a) A proposal was received by the Local Authority Planning Office for a Motel, Public House and Restaurant to be built on some private land in the city suburbs. Following an article by the builder in the local paper, the office received 300 letters of which only 28 supported the proposal. What conclusions can the Planning Officer draw from these statistics? Describe what action could be taken to gauge people's view further and proffer appropriate suggestions with explanations.
- (b) What are the various methods of collecting statistical data? Which of these is most reliable and why?

7. (a) Discuss the essentials of a good questionnaire. "It is proposed to conduct a sample survey to obtain information on the study habits of MAPOLY students and the facilities available to them". Explain how you will plan the survey. Draft a suitable questionnaire for this purpose.
- (b) Draw a random sample (without replacement) of 15 students from a class of 450 students from the random number below. State the steps to take and the appropriate numbers.

3952 6641 3992 9792 7979 5911 3170 5624
 4167 9524 1545 1396 7203 5356 1300 2693
 2370 7483 3408 2762 3563 1089 6913 7691
 0560 5246 1112 6107 6008 8126 4233 8776
 2754 9143 1405 9025 7002 6111 8816 6446

6. (a) The following data shows the expenditure on various heads in the first three five-year plans (in cores of ₦).

Subject	Expenditure (in cores ₦)		
	First Plan	Second Plan	Third Plan
Agriculture	361	529	1068
Power	561	865	1662
Small industries	173	176	264
Industry and minerals	292	900	1520
Transport and Communication	497	1300	1486
Social Services and Miscellaneous	477	830	1500

- Represent the data on a Pie Chart.
- (b) Distinguish between Primary and Secondary data and state two (2) merits and demerit each.