



# MOSHOOD ABIOLA POLYTECHNIC

ABEOKUTA, OGUN STATE.

DEPARTMENT OF STATISTICS &amp; MATHEMATICS

1<sup>ST</sup> SEMESTER EXAMINATION2022/2023 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 than 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 N).

Subject	Expenditure (in cores N)		
	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.