**Iya Abubakar Computer Centre**

**Institute of Computing & ICT**

**Ahmadu Bello University, Zaria.**

**Diploma II Computer Science/Computer System Engineer 2014/2015 First Semester Examination**

**Date of Examination: Time Allowed: 2hrs**

**INSTRUCTION: Answer all questions from part A and any 3 questions from part**

**PART A: Answer all question from this part**

1. Two dice are thrown and the sum of the numbers on the faces up is noted. The probability of this sum being 2 is
2. 1/6 b. 1/36 c. 1/18 d. none of the above
3. Two events A and B are mutually exclusive: if P(A)=1/5 and P(B)=1/3. The probability of A and B occurring is
4. 1/8 b. 8/15 c. 0 d. 1/15
5. The set that contains all the possible outcomes of an experiment is called a
6. United set b. census c. sample space d. population
7. An operation whose outcome cannot be predicted with certainty before it is carried out is called
8. Random variable b. random operation c. event d. random experiment
9. What is the first moment about the mean of the variable X having the values 9, 8, 7, 6, 5
10. 0 b. 3.5 c. 7 d. none of the above
11. The correlation coefficient is a measure of ---------------- of relationship between two variables
12. Number and type b. height and weight c. strength and direction
13. Which of the following is not a possible value of the coefficient of correlation?
14. +1 b. 0.012 c. -1 d. 1.012
15. A positive correlation coefficient between two variables x and y indicates that
16. When x increases, y increases b. when x increases, y decreases c. When x and y are always positive d. none of the above
17. A probability of an event based on personal opinion is called
18. Classical b. subjective c. commutative d. empirical
19. How many events are possible when three fair coins are tossed?
20. 1 b. 3 c. 8 d. 0

**PART B: Answer any three questions from this part**

**Question(1a).** Three balls are drawn successively from a box containing 6 red balls, 4 white balls, and 5 blue balls. Find the probability that they are drawn in the order red, white, and blue if each ball is

(a) replaced and

(b) not replaced

**Question(1b).** Find the probability of boys and girls in families with three children, assuming equal probabilities for boys and girls.

**Question(1c)*.*** *If we call X the random variable showing the number of boys in families with three children, find the probability distribution.*

**Question (2a).** If it rains, an umbrella salesman can earn N30 per day. If it is fair, he can lose N6 per day. What is his expectation if the probability of rain is 0.3?

|  |  |  |  |
| --- | --- | --- | --- |
| *X* | *-10* | *-20* | *30* |
| *p(x)* | *1/5* | *3/10* | *1/2* |

**Question (2b).** Find (a) $E(x)$ for the probability distribution of table below.

**Question(2c).** When are two events said to be

 i. Mutually exclusive event

 ii. Conditional probability event

**Question(3a).** Use the point(1,1) and (3,2) to find the equation of the straight line that reprent the data in the table below

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| X | 1 | 3 | 4 | 6 | 8 | 9 | 11 | 14 |
| Y | 1 | 2 | 4 | 4 | 5 | 7 | 8 | 9 |

**Question(3b).** Find an equation for the line using the method of **Least Squares** for the same data above.

**Question(4).**  Given that variable X can take the values 2, 3, 7, 8, 10. find (a) First moment (b) Second moment and (c) Second moment about the mean.