

Qassim University

STAT100

Model(A)

PYP

Time : 2 : 30 Hours

Final Exam (341)

Student Name :ID Number :

(Choose the correct answer for the following (30) questions)

1) In a group of adults, some own ipads (O), and others are not (N). If two adults are randomly selected from this group. List all the outcomes included in the event " One person has an ipad and the other does not".

- A. $\{ON, NO\}$ B. $\{OO, ON\}$
C. $\{ON, NO, NN\}$ D. None of these

2) A box contains 40 balls. Of them 18 are red and 22 are green. If one ball is randomly selected out of this box. What is the probability that this ball is red?

- A. $P(\text{red}) = \frac{22}{40}$ B. $P(\text{red}) = \frac{18}{40}$
C. $P(\text{red}) = \frac{40}{18}$ D. None of these

3) A die is rolled once. What is the probability that " A number less than 5 is obtained".

- A. 0.5021 B. 0.6667
C. 0.3333 D. None of these.

4) A statistical experiment has 10 equally likely outcomes that are denoted as 1,2,3,4,5,6,7,8,9, and 10. Let $A = \{3, 4, 6, 9\}$, $B = \{1, 2, 5\}$, and $C = \{1, 3, 5, 7, 9\}$ are given events. Find the probability of the event A.

- A. 0.4 B. 0.3
C. 0.7 D. None of these

- 8) In rolling a die once, the events $A = \{2, 4, 6\}$ and $B = \{1, 3, 5\}$ are:
 A. Mutually exclusive events B. Mutually non-exclusive events
- 9) If $P(A) = 0.36$ and $P(B|A) = 0.87$, then the joint probability of A and B is:
 A. 0.3132 B. 0.1212
 C. 0.3433 D. None of these
- 10) If A and B are two independent events, and $P(A) = 0.29$ and $P(B) = 0.65$, then the joint probability of A and B is:
 A. 0.0771 B. 0.1885
 C. 0.6010 D. None of these
- 11) Given that $P(A) = 0.72$ and $P(A \text{ and } B) = 0.38$, then $P(B|A)$ is:
 A. 0.8333 B. 0.7542
 C. 0.5277 D. None of these
- 12) The following two-way table gives a classifications of all basketball players at a university, based on the gender and whether or not they are graduated:

	Graduated (G)	Did not Graduated (DG)
Male(M)	126	55
Female(F)	133	32

- If one of these players is selected randomly, then $P(F \text{ and } G)$ is given by:
 A. 0.3844 B. 0.0921
 C. 0.2634 D. None of these
- 13) If $P(A) = 0.66$, $P(B) = 0.47$, and $P(A \text{ and } B) = 0.33$, then $P(A \text{ or } B) =$
 A. 0.90 B. 0.80
 C. 0.59 D. None of these
- 14) If A and B are two mutually exclusive events with $P(A) = 0.38$ and $P(B) = 0.59$, then $P(A \text{ or } B) =$
 A. 0.38 B. 0.74
 C. None of these D. 0.97

15) The following two-way table gives a classifications of all football players at a university, based on the gender and whether or not they are graduated:

	Graduated (G)	Did not Graduated (DG)
Male(M)	126	55
Female(F)	133	32

If one of these players is selected randomly, then $P(F \text{ or } DG)$ is given by:

- A. 0.6358 B. 0.9163
C. 0.8458 D. None of these

16) How many different outcomes are possible for four rolls of a die?

- A. Number of outcomes is 7776 B. Number of outcomes is 216
C. Number of outcomes is 1296 D. None of these

17) An ice cream shop has six flavors. A girl wants to buy two flavors of ice cream. If she randomly selects two flavors out of six, the number of combinations is:

- A. 15 B. 10
C. 21 D. None of these

18) A class has 20 students, three students are selected to solve 3 problems such that the first student to solve the first problem and second to solve the second problem and so on. The total arrangements of 3 students from the class is:

- A. 2730 B. 6840
C. 43680 D. None of these

19) A compound event includes :

- A. All final outcomes
B. Exactly two outcomes
C. More than one outcome for an experiment
D. None of these

20) The following table lists certain values of x and their probabilities. Is it represents a valid probability distribution :

x	0	1	2	3
P(x)	0.10	0.05	0.45	0.40

A. Valid probability distribution B. Non-valid probability distribution

21) The following table gives the probability ditribution of a discrete random variable x :

x	0	1	2	3	4	5	6
P(x)	0.11	0.19	0.28	0.15	0.12	0.09	0.06

then $P(x = 3)$ is equal to :

A. 0.58 B. 0.15
 C. 0.27 D. None of these

22) Find the mean (μ) for the follwing probability distribution

x	0	1	2	3
P(x)	0.16	0.27	0.39	0.18

A. $\mu = 1.59$ B. $\mu = 0.92$
 C. $\mu = 1.07$ D. None of these

23) Use the attached standard normal cumulative probability table, to find the area under the standard normal curve from $z = -1.67$ to $z = 2.24$:

A. $P(-1.67 \leq z \leq 2.24) = 0.94$ B. $P(-1.67 \leq z \leq 2.24) = 0.14$
 C. $P(-1.67 \leq z \leq 2.24) = 0.47$ D. None of these.

24) Use the attached standard normal cumulative probability table, to find the area under the standard normal curve to the right of $z = 1.36$:

A. 0.9798 B. 0.0244
 C. 0.0869 D. None of these.

25) Let x be a continuous random variable that is normally distributed with mean 25 and standard deviation 6. Use the attached standard normal cumulative probability table, to find the area between $x = 31$ and $x = 36$:

- A. 0.6441
B. 0.1251
C. 0.0436
D. None of these.

26) For a continuous random variable, the probability of a single value of x is always:

- A. Zero
B. 1.0
C. Between 0 and 1.0
D. None of these

27) Find the estimated regression line for the following information which obtained from a sample data set :

$$n = 10, \sum x = 100, \sum y = 220, SS_{xy} = 1480, SS_{xx} = 140$$

- A. $\hat{y} = 214 - 30x$
B. $\hat{y} = 1.5050 + 0.2525x$
C. $\hat{y} = -83.7143 + 10.5714x$
D. None of these

28) The correlation coefficient r for the following information which obtained from a sample data set :

$$n = 10, \sum x = 100, \sum y = 220, SS_{xy} = 1480, SS_{xx} = 140, SS_{yy} = 20432$$

- A. $r = 0.875$
B. $r = -0.996$
C. $r = -0.1555$
D. None of these

29) A simple regression is a regression model that contains:

- A. Only one independent variable.
B. Only one dependent variable.
C. One dependent variable and more than one independent variable.
D. Only one dependent variable and one independent variable

30) The value of $\frac{0!}{0!1!}$ is :

- A. 0
B. 1
C. undefined
D. None of these .