

ALLAMA IQBAL OPEN UNIVERSITY

Level:	Intermediate	Semester:	Spring 2011
Paper:	Understanding Math, Stat & Computer (359)	Maximum Marks:	100
Time Allowed:	03 Hours	Pass Marks:	40

**Note: ATTEMPT ANY FIVE QUESTIONS. ALL CARRY EQUAL MARKS.
QUESTION NO. (1) IS COMPULSORY.**

Q.1	Fill in the blanks.	20												
	i) Product of -5.630 and 0.579 is _____. ii) If $4(x - 6) = x - 3(2x + 1)$ then x will be _____. iii) In _____ quadrant the values of both x and y axis are positive. iv) Two lines are parallel if the _____ of both the lines are equal. v) The volume of a _____ can be find out by $\pi r^2 \cdot a$. vi) The probability of head is _____ if we toss a single coin. vii) The width of classes is known as _____. viii) The value which occurs most frequently is called _____. ix) _____ is the positive square root of variance. x) The most important system software program is the _____.													
Q.2	i. In a certain material voltage is proportional to current. Let the drop of voltage is form 220 volts to 200 volts. How much will be the current at 200 volts if the current at 220 volts is 7.5 amperes. Taking resistance as constant.	10												
	ii. Solve the system of equations graphically and write the solution. a) $2x - 3y = 7$ b) $2x - y = 4$ $2x - y = 1$ $4x - 2y = 8$	10												
Q.3	i. Differentiate between <i>circle</i> and <i>sphere</i> . How can we find the area in each case? Give examples.	10												
	ii. The perimeter of a rectangle is 90 cm. The length is 20 cm greater than the width. Find the length and the width.	10												
Q.4	i. Explain what is meant by random experiment, sample space and an event?	10												
	ii. Find the surface area and volume of a cylindrical tank if the radius of the tank is 4.1025 meters and the height is 6.535 meters.	10												
Q.5	i. What is meant by a frequency distribution? Describe briefly the main steps in the preparation of a frequency table from a raw data.	10												
	ii. Represent the total expenditure and expenditures on various items of a family by a pie chart. <table style="width: 100%; border: none;"> <tr> <td style="text-align: left;">Items:</td> <td style="text-align: center;">Food</td> <td style="text-align: center;">Clothing</td> <td style="text-align: center;">H/Rent</td> <td style="text-align: center;">Fuel</td> <td style="text-align: center;">Misc</td> </tr> <tr> <td style="text-align: left;">Expenditure:</td> <td style="text-align: center;">5500</td> <td style="text-align: center;">2000</td> <td style="text-align: center;">4200</td> <td style="text-align: center;">2200</td> <td style="text-align: center;">5000</td> </tr> </table>	Items:	Food	Clothing	H/Rent	Fuel	Misc	Expenditure:	5500	2000	4200	2200	5000	10
Items:	Food	Clothing	H/Rent	Fuel	Misc									
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Level: Intermediate

Paper: Understanding Math, Stat & Computer (359)

Time Allowed: 03 Hours

Semester: Spring 2017

Maximum Marks: 100

Pass Marks: 40

Note: ATTEMPT FIVE QUESTIONS. QUESTION NO. 1 IS COMPULSORY.

Q-1 Fill in the blanks.

(20)

- i- Round off 7.8542 to two decimal places _____
- ii- Point A(-1,3) lies in _____ quadrant.
- iii- Area of square when "b" is one side is _____
- iv- $\frac{\text{Circumference}}{\text{Diameter}} =$ _____
- v- The binary system consists of _____
- vi- A probability 1 indicates a _____ event.
- vii- WAN stands for _____
- viii- 8 bits = _____
- ix- CPU has two components CU and _____
- x- $\sqrt{64} =$ _____

Q-2

- i- Solve $4(x-6) = x-3(2x+1)$
- ii- Calculate $4\frac{1}{2}\%$ of 3900.

(10)

(10)

Q-3 i- Find the diameter of the circle if the circumference of the circle is 1.5 cm?(10)

iii- Find the volume of a cone, if its radius is 7.5 cm the height of the cone is 17.2 cm?(10)

Q-4 i- Define EVENT And EXPERIMENT?(10)

ii- 3 coins are tossed calculate the following probabilities (1) P(3 heads) (2) P(2 Tails)?(10)

Q-5 i- Differentiate between population and sample?(10)

ii- If you are asked to draw a bar graph of weekly temperature of your city then what will you take along x-axis? along y-axis?(10)

Q-6 i- Write the formulae of Variance and standard variance?(10)

ii- The price of 15 shoes 36,40,41,43,40,38,39,41,42,41,43,45,42,44,42. Find MODE of the shoes?
(10)

Q-7 i- What is a computer ?

(10)

ii- Write the importance of computers of in education?

(10)

Q-8 i- Differentiate between output and input devices of a computer?

(10)

ii- Discuss any five DOS commands?

(10)



Level: Intermediate
Paper: Understanding Math. Stat & Computer (359)
Time Allowed: 03 Hours

Semester: Spring 2018
Maximum Marks: 100
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Note: ATTEMPT FIVE QUESTIONS. QUESTION NO. 1 IS COMPULSORY.

- Q1 (i) Surface area of a sphere can be calculated by using the formula _____
- (ii) The point $(-2, 4)$ lies in the _____ quadrant.
- (iii) If the two lines do not intersect each other, then the lines are _____
- (iv) If an event is neither sure nor impossible then its probability is _____
- (v) The median of 21,35,2,89,46,1,5 is _____
- (vi) The sum of deviations from mean of a data is _____
- (vii) Quadratic equation is also known as _____ degree equation.
- (viii) Brain of the computer is _____
- (ix) LAN is abbreviation of _____
- (x) The most famous system software is _____
- Q2 (i) Solve the system of linear equations $x - 3y = 8$ and $3x - y = 6$
- (ii) A digit is selected at random from first 9 natural numbers; find the probability that the selected number is prime number greater than 3. Also find the probability that number is neither divisible by 3 nor by 5.
- Q3 (i) Find the surface area and volume of a semi-sphere of radius 5 cm.
- (ii) Write brief note on software and Hardware components of a computer.
- Q4 (i) A bag contains 5 red, 8 white and 3 yellow balls. Two balls are drawn from the bag such that first ball is replaced before drawing the second. What is the probability that
- (a) First ball is yellow and the second is white.
- (b) Both the balls are red.
- (ii) Calculate the mean and median from the data 23, 12, 43, 22, 16, 21, 45, 32, 57
- Q5 (i) What is statistics? Differentiate between population and sample with example.
- (ii) Find the volume of cone if its radius is 7.1 cm and height is 12.4 cm
- Q6 (i) What is artificial intelligence and explain briefly what an expert system is.
- (ii) The perimeter of a rectangle is 120 cm. If the length is two times its width then find the length and width of the rectangle.
- Q7 (i) What is secondary storage discuss in detail.
- (ii) A chemist has a solution that is 80% acid (and the rest water) and another solution that is 30% acid. What is needed in 200 liters that is 62% acid. The chemist will prepare it by mixing the two solutions in hand. How much of each should be used.
- Q8 (i) Write brief note on computer designing and explain briefly how CAD is preferred over manual drawing.
- (ii) Six coins are tossed simultaneously. What is the probability of getting
- (a) 7 heads (b) 4 tails



ALLAMA IQBAL OPEN UNIVERSITY, ISLAMABAD

Paper: Understanding Math, Stat & Computer (359)
Level: Intermediate
Time :3hrs

Semester: Autumn, 2017
Total Marks: 100
Pass Marks: 40

Note: ATTEMPT ANY FIVE QUESTIONS. QUESTION NO. 1 IS COMPLUSORY

Question # 01. Fill in the Blanks (20)

- i. 4 % of 3900 is _____
- ii. if r is the radius of a circle then the circumference of a circle is _____
- iii. If an event is sure to happen then the probability is _____
- iv. If two angles of a triangle are 60° and 90° . The value of third angle is _____
- v. In tossing a coin the sample space consists of _____ outcomes.
- vi. The sum of differences of the observations from their mean is always _____
- vii. The brain of a computer is _____
- viii. 8 BITS = _____ BYTE
- ix. LAN stands for _____
- x. $3x + 5 = 30$, then $x =$ _____

Question # 02 (10+10=20)

- i. In a certain material voltage is proportional to current. Let the drop of voltage is from 220 Volts to 150 volts. How much will be the current at 150 volts if the current at 220 volts is 5 amper. (Taking resistance constant)
- ii. Write situation from daily life which shows Direct Proportion.
a) Both the terms increase b) Both the terms decrease.

Question # 03 (10+10=20)

- i. Solve the linear system: $8x - 4y = 3$, $5x + 2y = 3$
- ii. A cone has the height of 3 meters and the radius of the cone is 2 meters. What is the surface area of the cone?

Question # 04 (10+10=20)

- i. Marks of a student in different subjects are as follows:
25, 35, 45, 35, 20, 50, 13, 57. Find the variance of the data.
- ii. Prices of the different commodities are given as:
14, 17, 15, 12, 18, 13, 11. Find (i) Mean (ii) Median

Question # 05 (10+10=20)

- i. 4 coins are tossed, calculate the probability of getting
a) 4 heads b) 3 tails
- ii. For a certain frequency table the lower limit of the first class is 10. The class interval is 20 and there are 5 classes. Identify the other 4 lower class limits.

Question # 06(10+10=20)

- i. What do you know by Systems Software?
- ii. Discuss any five DOS commands?

Question # 07 (10+10=20)

- i. Explain LAN and WAN?
- ii. How CAD be preferred over manual drawings?

Question # 08 (10+10=20)



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Note: ATTEMPT FIVE QUESTIONS. QUESTION NO. 1 IS COMPULSORY.

Question # 1

- i. The diameter of the circle is _____ if the circumference of the circle is 3cm
- ii. If $3x - 4 = 8$, then $x =$ _____.
- iii. $(-3, -4)$ lies in the _____ quadrant.
- iv. The collection of all possible outcomes of an experiment is known as _____.
- v. The median of 15, 18, 19, 14, 18, 1, 16, 18, 17 and 15 is _____.
- vi. If two angles of a triangle are 60° and 90° . The value of third angle is _____.
- vii. A die is rolled, the probability that a "zero" will occur is _____.
- viii. Quadratic equation is also known as _____ degree equation.
- ix. 1 BYTE = _____ BITS.
- x. LAN is abbreviation of _____.

Question # 2

- i. Construct a line graph to represent the restoring force of a spring, $F = -kx$, as x varies from -2 to $+2$. Assume $k = 4$
- ii. A rectangular garden is 80m by 60m, part of the garden is turn up to install a strip of lawn around the garden. The new area of the garden is 800m^2 . How wide is the strip of lawn?

Question # 3

- i. Find the surface area of the water tank, if the radius of the tank is 3 meters and the height of the tank is 5 meters.
- ii. 3 coins are tossed, calculate the following probabilities; a) $P(3 \text{ heads})$ b) $P(\text{tails})$ c) $P(1 \text{ head})$.

Question # 4

- i. Marks of a student in different subjects are as follows: 25, 35, 45, 35, 20, 50, 13, 57
Find the variance and standard deviation of the data.
- ii. The weight (in kg.) of 7 sheep is recorded as: 30, 40, 25, 15, 24, 49, 32. Find the mean weight of sheep and show that the sum of the differences of the observations from their mean is zero.

Question # 5

- i. What is statistics? Differentiate between population and sample with example?
- ii. Calculate the probability that a person of 25 years living to 60 years? Given that:
Number living of age 25 years : 9575636
Number living of age 60 years : 5698698

Question # 6

- i. The area of a trapezoid is 15 sq. meters. The altitude is $\frac{1}{3}$ of the lower base and the lower base is 8 meters longer than the upper base. Write down the statement in equation form for the problem and determine the lengths of the lower and upper base.
- ii. Define sampling. Write down one situation from your everyday life when you use sample to judge the population.

Question # 7

- i. What types of computer do you think would be most suitable for each of these jobs and why? :
a) Maintaining data for a large bank b) Playing computer games c) Working in a nuclear lab d) A designer working on a computer seeking its help in graphics e) An editor working on a computer to compose his/her book f) A computer operator feeding data about admission to the computer.
- ii. Discuss in detail the different types of the printer.

Question # 8

- i. Explain briefly expert system and artificial intelligence.
- ii. How CAD be preferred over manual drawings?