



Pir Mehr Ali Shah

## Arid Agriculture University, Rawalpindi

Office of the controller of Examinations

Mid Exam (Theory) / Fall 2020 (Paper Duration 24 hours)

### To be filled by Teacher

Course No.: ...MGT-391.....Course Title:.....Business Mathematics.....

Total Marks:.....18.....Date of Exam:.....07-12-2020.....

Degree: .....BBA..... Semester:.....1<sup>st</sup>..... Section:.....

Q.No.	1	2	3	4	5	6	7	8	9	10	Marks Obtained/ Total Marks
Marks Obtained											
Total Marks in Words:											
Name of the teacher: Dr. Ahmed Imran Hunjra											
Who taught the course: Signature of teacher / Examiner:											

### To be filled by Student

Registration No.: ..... Name:.....

*Note: i: Plagiarism policy will be strictly followed, ii: Solve the paper in this sheet, iii: Don't change the template, iv: only word document is acceptable to upload at LMS, v: Write your section, exact name & registration number in particular places, vi: Don't delete questions, just solve under each part of each question vii: Answer all questions.*

**Q.No.1. (Marks...10)**

**a). What is a Cartesian plan? Discuss in detail. Determine the mid-point and distance between two points (-6, 5) & (3 & 2) and draw the graph.**

**b) What are the types of equations? How we solve 1st & 2nd degree equations? What are the characteristics of slope and show each in graph? Solve the following with factoring method?**

$$3r^2 = 14r - 8$$

**c) New York City received a federal grant of \$ 100 million for improving public transportation. The funds are to be used only for purchases of new buses, purchases of new subway cars or repaving of city streets. Costs are estimated at \$ 150,000 per bus, \$180,000 per subway car, and \$ 250,000 per mile repaving. City officials want to determine different ways of spending the grant money. Determine the linear equation. Further, if it has been determined that 100 buses and 200 new subway cars will be purchased, how many miles of city streets can be repaved.**

Answer: \_\_\_\_\_

\_\_\_\_\_

**Q.No.2. (Marks...10)**

**a) Question # 4: (05): What is system of equations? What are the possible solution sets and how we can solve the system of equation? Explain in detail. Solve the given equations graphically and verify your answer.  $x + 3y = 6$  &  $5x - 7y = 21$**

**b) Determine the slope-intercept form of the linear equation: Passes through (-4, -1) and is perpendicular to the line  $X= 10$  and  $Y=5$**

**c) A portfolio manager is concerned that two stocks generate an annual income of \$15,000 for a client. The two stocks earn annual dividends of \$2.40 and \$ 3.50 per share, respectively. If  $X$  equal the number of shares of stock 1 and  $y$  equals the number of shares of stock 2. Rewrite the equation in slope-intercept form and interpret the meaning of the slope and  $y$  intercept. Solve for the  $x$  intercept and interpret its meaning?**

Answer: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Q.No.3. (Marks...10)**

**a) Solve the system of equations with elimination method and what is the type of solution?  $x + y= 3$ ;  $2x =12 + y$ ;  $x - 4y=13$ ;  $-2x = -5y$**

**b) Determine whether there is a combination of three components satisfying the system. Apply Gaussian elimination approach.**

$$X_1 + X_2 + X_3 = 60,000$$
$$2X_1 + 1.5X_2 + 1.23X_3 = 90,000$$
$$2X_1 = X_3$$

Answer: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_