স্কুল অব বিজনেস

Bangladesh Open University
MBA Program
Semester: 192 (2nd Level)

Course: Business Mathematics   **Due on: May 27, 2022**

Instructions

➢ **Answer the all questions in your <u>own handwriting</u> on <u>A4 size white paper</u>.**
➢ **The assignment must be submitted on the assigned date to the Coordinator of the study center you are attached with.**
➢ **Spiral binding is strictly prohibited. Instead, transparent folder or file cover or any other soft binding may be used.**

Questions

1. Distinguish between:
   (i)   Algebraic functions and transcendental functions
   (ii) Exponential functions and logarithmic functions
   (iii) Linear functions and quadratic functions
   (iv) Univariate functions and multivariate functions

2. Find the slope, X-intercept and Y-intercept of the following functions:
   (i) $Y = 6X + 3$
   (ii) $Y = 3X^2 - 9X + 6$
   (iii) $Y = 2X + 10$
   (iv) $Y = (10X + 6)/7$

3. Differentiate the following functions with respect to X and find which ones are increasing or decreasing at X=5:
   (i) $Y = 5X^2 + 3X + 10$
   (ii) $Y = 3^{(2X+5)}$
   (iii) $Y = 5e^{lnX+2} +$
   (iv) $Y = Log_a X^2$

4. Find $\dfrac{\partial Y}{\partial X_1}$ and $\dfrac{\partial Y}{\partial X_2}$ from the following functions:
   (i) $Y = 10X_1 + 2X_1 X_2$
   (ii) $Y = e^{X}{}_1 + 15X_1 X_2$
   (iii) $Y = 10X_1 X_2 + 17X_2$
   (iv) $Y = Log X_1 X_2 + 11$
   (v) $Y = ln X_1{}^2 + 20$

Note: Submit your assignment to the Coordinator of the Study Center you are attached with.

Bangladesh Open University
MBA Program
Semester: 192 (2nd Level)

Course: Business Mathematics   Due on: July 29, 2022

(Answer all the questions in own handwriting on A4 size white pages)

1. What is matrix? "All diagonal matrices are not scalar matrices" – do you agree? Give examples in favour of your answer. Find AB, Determinant of A and Determinant of B from the following matrices:

$$i.\ A = \begin{bmatrix} 4 & 2 & 0 \\ 2 & 3 & 2 \\ 0 & 1 & 6 \end{bmatrix} \quad ii.\ B = \begin{bmatrix} 6 & 3 & 4 \\ 1 & 0 & 1 \\ 2 & 2 & 3 \end{bmatrix}$$

2. What are the critical values that may be noticed in a non-linear function? Mention the necessary and sufficient conditions for identifying the critical values. Find the critical values of the following functions:
   (a) $Y = 5X^3 + 3X^2 + 10X + 100$
   (b) $Y = 10X^2 - 4X + 65$
   (c) $R = 5Q^3 + 3Q^2 + 7Q + 15$

3. Give examples of void set, singleton, power set and universal set. Identify which of the following are finite sets -
   (i)   The set of odd positive integers;
   (ii)   The set of all integers, whose squares are less than 60;
   (iii) The set of integers satisfying the equation $x^2 – 5x + 6 = 0$;
   (iv)   The set of students in your class who are taller than 7 feet.

4. If A = {1, 2, 3, 4}, B = {2, 4, 6, 8} and C = {3, 4, 5, 6}, Find –
   (i) A∪B, (ii) B∪B, (iii) (A∪B)∪C, (iv) A∪(B∪C).

5. Using Venn Diagram, verify the following:
   i) $A \cap (B \cap C) = (A \cap B) \cap C$, ii) $A \cup (B \cap C) = (A \cup B) \cap C$.

6. [Permutation] Find the number of words that can be formed by using the letters of the word "DEMOCRACY" where first letter will be always C and last letter will be R.

7. [Combination] A group of 15 students is to be formed from 44 students of MAT100 Course. Among the students of the course there is 2 renowned batsmen, 3 spinners, 2 fast blowlers and 2 wicketkeepers. How many different ways this can be done so as always to (i) include 1 renowned batsman, 1 fast bowler, 1 spinner and 1 wicketkeeper; and (ii) exclude spinners?

Note: Submit your assignment to the Coordinator of the Study Center you are attached with.

Bangladesh Open University
MBA Program
Semester: 192 (2nd Level)

Course: Business Statistics for Decision Making   **Due on: May 27, 2022**

Instructions

➢ Answer the all questions in your **own handwriting** on **A4 size white paper**.
➢ The assignment must be submitted on the assigned date to the Coordinator of the study center you are attached with.
➢ Spiral binding is strictly prohibited. Instead, transparent folder or file cover or any other soft binding may be used.

Questions

1. (a) What is Business Statistics? Why do we need to study Business Statistics?
   (b) Discuss briefly the difference between descriptive and inferential statistics.
   (c) What is the difference between a frequency distribution and a relative frequency distribution?
   (d) Why is a cumulative relative frequency distribution so much more informative than just the relative frequency distribution?

2. (a) Why do we have so many different measures of central tendency? Are all really necessary or do they essentially provide the same information?
   (b) The management at a small manufacturing plant has noticed that the price of steel has increased significantly over the past several years. Looking over their records, they find that over the four-year period, prices have increased by 40%. They expect this same trend in prices for next year. In budgeting for next year, by how much should they expect prices to increase?
   (c) Given below is the frequency distribution of the marks obtained by 93 students. Compute the arithmetic mean, median and mode.

Marks	No. of Students	Marks	No. of Students
20 – 29	5	60 – 69	18
30 – 39	12	70 – 79	10
40 – 49	15	80 – 89	9
50 – 59	20	90 – 99	4

3. (a) Why is it necessary for a measure of variation to accompany a measure of central tendency?
   (b) The supervisor of a tourist information desk at a local airport is interested in how long it takes an employee to serve a customer. Using a stopwatch, he measures the amount of time it takes for each of 10 customers. These times, measured in minutes, are reported as follows: 2.3, 1.5, 3.9, 0.6, 2.7, 3.1, 2.8, 0.9, 1.4, and 2.6.

   Calculate the standard deviation and the interquartile range.
   (c) Calculate the appropriate measure of variation from the following data.

Daily Wages(in Taka)	No. of Wage earners	Daily Wages(in Taka)	No. of Wage earners
Less than 85	14	91 – 93	18
85 – 87	62	Over 93	7
88 – 90	99		

Note: Submit your assignment to the Coordinator of the Study Center you are attached with.

ষ্কুল অব বিজনেস

Bangladesh Open University
MBA Program
Semester: 192 (2nd Level)

Course: Business Statistics for Decision Making　　　　　　　**Due on: July 29, 2022**

(Answer all the questions in own handwriting on A4 size white pages)

1. A college administers for all its courses a student evaluation questionnaire. For a random sample 12 courses the accompanying table shows both the average student ratings of the instructor (on a scale from 1 to 5), and the average expected grades of the students (on a scale from 0 to 4).

Inspector Rating	3.5	4.3	3.2	3.6	4.1	2.9	3.9	4.4	3.4	4.2	3.8	4.9
Expected Grade	2.8	2.9	2.4	3.2	3.3	2.8	3.1	3.3	2.6	3.0	3.4	3.5

   (a) Calculate the covariance between instructor ratings and expected grades.
   (b) Calculate the sample correlation coefficient between instructor ratings and expected grades.

2. (a) Explain the concept of regression and point out its importance in business forecasting.
   (b) The Following Table shows the ages(X) and blood pressure (Y) of 8 persons:

X	52	63	45	36	72	65	47	25
Y	62	53	51	25	79	43	60	33

   Obtain the regression equation of Y on X and find out the expected blood pressure of a person Who is 49 years old.

3. (a) What are time reversal and factor reversal tests?
   (b) Calculate Laspeyre's, Paasche's and the Fisher's ideal index from the following data:

Commodity	Price	Value	Price	Value
A	10	100	8	96
B	16	96	14	98
C	12	36	10	40
D	15	60	5	25

4. (a) Explain what do you understand by Time series. Why is time series considered to be an effective tool for forecasting?
   (b) The following table shows the number of salesmen working in a certain concern:

Year:	2014	2015	2016	2017	2018
No. of Salesmen:	28	38	46	40	56

   Use the method of least squares to fit a straight line and estimate the number of salesmen in 2019.

Note: Submit your assignment to the Coordinator of the Study Center you are attached with.

স্কুল অব বিজনেস

Bangladesh Open University
MBA Program
Semester: 192 (2ⁿᵈ Level)

Course: Organizational Behavior   **Due on: May 27, 2022**

Instructions

- ➢ **Answer the all questions in your <u>own handwriting</u> on <u>A4 size white paper</u>.**
- ➢ **The assignment must be submitted on the assigned date to the Coordinator of the study center you are attached with.**
- ➢ **Spiral binding is strictly prohibited. Instead, transparent folder or file cover or any other soft binding may be used.**

Questions

1. (a) Why the employees of an organization should have knowledge about organizational behavior?

   (b) Many managers believe that empowerment is the key to a successful total quality organization. What is the reason behind this statement? Defend your answer.

   (c) How does a learning organization differ from a traditional organization? What impact do these differences have on the way people are managed?

2. (a) Briefly define the three classifications of needs, or motives. What are some examples of each?

   (b) In Vroom's model, what are valence, expectancy, and force? How do these variables relate to one another and to work motivation? Give realistic examples.

   (c) What are some examples of non financial rewards? How can these be used to improve employee performance?

3. (a) State some of the functions and dysfunctions of informal group.

   (b) Explain the various stages of formation of a work group.

   (c) What is group think? State the major symptoms of group think.

Note: Submit your assignment to the Coordinator of the Study Center you are attached with.

Bangladesh Open University
MBA Program
Semester: 192 (2nd Level)

Course: Organizational Behavior   Due on: July 29, 2022

(Answer all the questions in own handwriting on A4 size white pages)

1. (a) What is job stress?
    (b) Is it always bad for the individuals? Explain.
    (c) Discuss the coping strategies that can be designed by management to eliminate or control organization level stressor in order to prevent or reduce job stress for individual employees.

2. (a) What is organizational culture? How strong culture differs from weak culture?
    (b) State the factors that determine the strengths of the organizational culture.
    (c) How employees learn culture? Explain.

3. Go through the case and answer the question below the case.

    Leadership Mettle Forged in Battle

    In 2008, facing a serious shortage of leadership-ready employees at the store management level, Walmart decided to recruit from the U.S. military. The company sent recruiters to military job fairs and hired 150 junior military officers, pairing them with store mentors to learn on the job. The result: Walmart claims that it's been able to bring in world-class leaders who were ready to take over once they had learned the retail business that Walmart could easily teach them. Other organizations that have heavily recruited from the military in recent years include GE, Home Depot, Lowe's State Farm Insurance, Merck, and Bank of America.

    It's not really surprising to see companies turn to the military for leadership potential. A long tradition of books and seminars advises leaders to think like military leaders ranging from Sun Tzu to Norman Schwarzkopf. And military veterans do have a variety of valuable skills learned through experience. General David Petracus notes, "Tell me anywhere in the business world where a 22 or 23 year old is responsible for 35 of 40 other individuals on missions that involve life and death... They're under enormous scrutiny, on top of everything else. These are pretty formative experiences. It's a bit of a crucible-like experience that they go through." Military leaders are also used to having to make due in less than optimal conditions, negotiate across cultures, and operate under extreme stress.

    However, they do have to relearn some lessons from the service. Some may not be used to leading someone like an eccentric computer programmer who works strange hours and dresses like a slob, but who brings more to the company's bottom line than a conventional employee would. Indeed, in some companies like Google, there is nothing like the chain of command military leaders are used to. Still, most forecasts suggest there will be an ample supply of battle-tested military leaders ready to report for corporate duty in the near future, and many companies are eager to have them.

    Questions

    1. Do you think leaders in military contexts exhibit the same qualities as organizational leaders? Why or why not?

    2. In what ways not mentioned in the case would military leadership lessons *not* apply in the private sector? What might military leaders have to re-learn to work in business?

    3. Are specific types of work or situations more likely to benefit from the presence of "battle-tested" leaders? List a few examples.

Note: Submit your assignment to the Coordinator of the Study Center you are attached with.

স্কুল অব বিজনেস

Bangladesh Open University
MBA Program
Semester: 192 (2nd Level)

Course: Human Resource Management   **Due on: May 27, 2022**

Instructions

➢ **Answer the all questions in your <u>own handwriting</u> on <u>A4 size white paper</u>.**
➢ **The assignment must be submitted on the assigned date to the Coordinator of the study center you are attached with.**
➢ **Spiral binding is strictly prohibited. Instead, transparent folder or file cover or any other soft binding may be used.**

Questions

1. (a)   What do you mean by human resource management? Why are HR policies, program and plans so important?

   (b)   What are the core functions of human resource management (HRM)? Which two functions do you believe to be the most important for human resource management? Explain your answer and provide a workplace example to support your response.

   (c)   The business world has experienced numerous changes as a result of technology and globalization. It is important for the field of HRM to be prepared for these changes. In what ways have technology and globalization changed the work environment? Provide real workplace examples to support your answer, and explain the effects of these changes to HRM?

2. (a)   What is HR planning? Is human resource planning only relevant to large companies or should small businesses do HR planning too?

   (b)   Can you suggest a process to use for human resource planning?

   (c)   State the human resource forecasting techniques. Discuss in brief the different employee forecasting techniques for human resource planning.

3. (a)   What do you mean by job analysis? State the major uses of job analysis information.

   (b)   Explain the observation method and technical conference method of collecting job analysis information.

   (c)   What is job design? Explain the approaches of job design.

Note: Submit your assignment to the Coordinator of the Study Center you are attached with.

স্কুল অব বিজনেস
Bangladesh Open University
MBA Program
Semester: 192 (2nd Level)

Course: Human Resource Management   **Due on: July 29, 2022**

(Answer all the questions in own handwriting on A4 size white pages)

1. (a) What is recruitment? How does recruitment differ from selection?
    (b) Discuss the process of recruitment.

2. (a) What is selection? Explain the process of selection.
    (b) Describe the barriers to effective selection.

3. (a) What is career planning? Why should a human resources department be concerned about career planning? What advantages does a human resources department expect to receive from assisting career planning?
    (b) Discuss the types of training methods and distinguish between on-the job and off-the job training. Explain the methods of off-the job training.
    (c) Discuss the process of management development.

4. (a) What are the uses of performance appraisals? How do the results of performance appraisals affect other human resource management activities
    (b) Explain the steps in performance appraisal.
    (c) Discuss the methods of job evaluation.

5. **Read the following passage and answer the question that follow:**

    Salina Perveen, a graduate from the Department of Management, University of Dhaka received an interview card from the Bangladesh Bank to appear before a interview board on 4 May, 2017 at 10 a.m. . She was staying at Kalabagan in Dhaka. She thought that she could be able to reach Motijheel Bangladesh Bank office within 1 hour from her residence by a CNG transport. So, she started at 9a.m. and took a CNG transport. But due heavy traffic jam she could not reach due time. When she reported the reception, she was informed that she missed the call from the board and she had to wait till the last interviewee completed his/her the interview. At last her term came and she entered into the interview room and took her seat.

    'Why are you late?' the chairperson of the board asked.

    'I did not come on time due to traffic jam'. She replied.

    'It's regular feature of the city. Why did you not start early?' Asked one member.

    'I started one hour before the time of interview. But today, traffic jam was unexpectedly heavy.' Explained Salina.

    'You must know that sometimes it could happen. So, this shall not be an excuse'. Said one member.

    'OK. Let us start. But this would affect your rating'. Said the Chairperson.

    Discussion question

    Explain what made Salina late and how she could avoid the situation.

    Note: Submit your assignment to the Coordinator of the Study Center you are attached with.

Bangladesh Open University
MBA Program
Semester: 192 (2nd Level)

Course: Managerial Economics   **Due on: May 27, 2022**

Instructions

 ➢ **Answer the all questions in your <u>own handwriting</u> on <u>A4 size white paper</u>.**
 ➢ **The assignment must be submitted on the assigned date to the Coordinator of the study center you are attached with.**
 ➢ **Spiral binding is strictly prohibited. Instead, transparent folder or file cover or any other soft binding may be used.**

Questions

1.1   What is managerial economics? Give 5 examples of economic problems.

1.2   "Economics is not dealing with money" – do you agree with the statement? Elaborate your answer.

1.3   What do mean by demand? Do you think that technology can influence the demand for the fast foods? – how? Use graphs.

1.4   How do government's policies influence business? How can the withdrawal of subsidy on fertilizer influence the supply of rice in the market? Explain with examples. Use graphs.

1.5   In Ramadan, we can notice that availability of some products in the market are huge, which we do not see in the normal time in that scale. Choose 2 products that are highly popular to you or your family. Now think of their normal supply and identify the factors that influences of Ramadan on the supply of those products. Do you think the supply of those products will be reduced after Ramadan? Why? Show in graphs.

1.6   How did the higher demand watermelon during Ramadan influence the Consumer Surplus of the customers?

1.7   How does excess supply of pineapples in the market influence the producer surplus this year? Explain.

1.8   What is the market clearing price? How it is derived? Show in graphs.

1.9   Suppose, demand function for and supply function of rice are $Q_D = 40 - 2P$ and $Q_S = 20 + 3P$ respectively.
   a.   Calculate the market clearing price and quantity of rice.
   b.   If govt. withdraws subsidy on fertilizer, what will happen to the market of rice remaining all other things same.

1.10   **FOCUS**   Click on the LINK or scan the QR code to watch the video and understand the factors that influence business. Then focus on your organization/company or your friend's company to audit the organisation's internal economic environment and external economic environment that influence its business. **WRITE a story in 3000 words (maximum)**

https://www.t.ly/z4zS

Note: Submit your assignment to the Coordinator of the Study Center you are attached with.

ষ্কুল অব বিজনেস

Bangladesh Open University
MBA Program
Semester: 192 (2nd Level)

Course: Managerial Economics   **Due on: July 29, 2022**

(Answer all the questions in own handwriting on A4 size white pages)

2.1   What is elasticity? What are the determinants of price elasticity of demand for a commodity?

2.2   Suppose, the demand function for X-good is:
$Q_D = 50 - 3P_X + 4P_Y - 3P_Z + 5M + 2A + 3P^N$
where P_X =Price of X=3, P_Y =Price of Y=4, P_Z =Price of Z=2, M = Income of the consumer=100, A=Advertisement cost=50, P^N=Population size=200
Find -
i.   Price elasticity of demand for X
ii.   Cross elasticity of demand for X with respect to Z
iii.   Income elasticity of demand for X
iv.   What type of product X is - inferior, normal or luxury?
v.   What is the relationship between X and Z - substitutes or complementary?

2.3   Suppose, due to the increase in the price of bread from Tk. 30 to Tk. 50, the quantity demanded for bread is decreased from 100Kg to 70Kg per week. Calculate the price elasticity (E_p) of demand for bread.

2.4   Do you think a hawker keeps records of all the costs (explicit and implicit) in his/her business? If not, which cost items are not explicit in that case? Guess.

2.5   The details of the production activity of a farm are as below:

	Name of the Inputs	Quantity of inputs required	Price of input	Ownership of input
Product: Rice	Land	500 Decimals	Tk. 10/Decimal	Family
	Labor	20 Mandays	Tk. 300/Manday	Family
	Seed	50 Kg	Tk. 15/Kg	Market
Output: 300Kg	Fertilizer (Chemical)	20Kg	Tk. 30/Kg	Market
	Irrigation	3 Months	Tk. 500/Month	Market
	Ploughing	Tractor	Tk100/100 Decimal	Market
Interest: rate=15%	Cowdung	100kg	Tk. 20/10Kg	Family
	Insecticide	3 Litres	Tk. 200/Litre	Market
	Entrepreneurship	1	Tk. 5000 (Opportunity cost)	

Find – i) Accounting cost ii) Economic cost

2.6   Describe the law of diminishing returns to variable proportions? How this law is different from the law of decreasing returns to variable proportions? Identify which of the following are increasing, decreasing or constant returns to scale production functions: (i) $Q=AKL^2$, (ii) $Q=AK^{0.5}L^{0.4}$, (iii) $Q=AK^{0.4}L^{0.6}$, (iv) $Q=50KL^{0.5}$.

2.7   What is the necessary condition for a firm to reach its equilibrium? Explain graphically the equilibrium of a competitive firm earning normal profit.

2.8   **FOCUS**

Click on the LINK or scan the QR code to watch the video and understand how WHSmith promoted digitalization in the retail industry. Then focus on your context/country and elaborate on whether similar strategies would work in the retail industry in your own country. WRITE a story in 3000 words (maximum)

https://www.t.ly/w7hj

Note: Submit your assignment to the Coordinator of the Study Center you are attached with.