

Mid-West University
Examinations Management Office
 Surkhet, Nepal
 Chance Examination-2079
 Bachelor of Business Administration (BBA)
 Semester - VII

Subject: Operation Research

Course Code: MGT 471

Full Marks: 100 Pass Marks: 50

Time: 3:00 Hours

You are required to answer in your own words as far as applicable. The figures in the margin indicate full marks.

SECTION B: SHORT ANSWER QUESTIONS (8 × 5 = 40 MARKS)

Answer any **EIGHT** questions:

1. With an example, write clearly the meaning of term 'operation'. Draw a diagram showing a production system. [2+3]
2. What is the difference between intermittent and continuous production system? Give an example of assembly line technology and mention some of its features. [2+3]
3. Write down the meaning of capacity. Mention the different forms of capacity measures. [2+3]
4. How would you arrive at a decision while selecting the best location using cost benefit analysis? Describe with an example. [5]
5. Why do you consider the issue of layout important in your business? Write the meaning of product layout. Under what condition is product layout preferable? [2+1+2]
6. A company uses annually 1200 units of raw material costing Rs. 1.25 per unit. Placing each ordering costs Rs. 15 and the carrying costs are 15 % per year per unit of average inventory. Find the economic order quantity and total annual cost of ordering and holding the stock. [2.5+2.5]
7. With a suitable figure, write a note on fixed quantity model of inventory management system. How does ABC analysis serve in inventory management policy? [2.5+2.5]
8. Mention the different types of preventive maintenance. What is the risk associated with breakdown maintenance? [4+1]
9. Define the term quality. Concisely discuss the elements of quality. [2+3]
10. Following the table shows the weight of an automobile part. Five samples were taken randomly in the interval of one hour. Draw the mean and range charts to ensure if the process is in control. [2.5+2.5]

Samples	Weights in ounce			
1	10	12	10	12
2	10	12	13	13
3	10	10	9	11
4	11	10	9	14
5	12	12	12	12

SECTION C: LONG ANSWER QUESTIONS (3 × 10 = 30 MARKS)

Answer any **THREE** questions:

11. Suppose you are the operation manager of a company manufacturing high quality bakery in order to supply in five star hotels and reputed restaurants across the country. What are your important functions and decision areas? Discuss with relevant examples. [10]
12. "With critical assessment on contribution of scientific, behavioral and post behavioral principles to the field of operations management, explain the evolution of the discipline up-to the modern days. [10]
13. What is a new product? Briefly discuss the steps followed in new product development process. [2+8]

14. Discuss the several components of Total Quality Management. Describe the 5S tool of implementing Kaizen. [5+5]
15. The machines M1 and M2 have 80 and 60 hours of time available on them respectively. The two products P1 and P2 require for their production different amount of time on each of two machines as shown in the table below.

Product	M1 hours	M2 hours
P1	2	3
P2	4	2
Total Time available	80 hours	60 hours

Each unit of P1 and P2 yield Rs 60 and Rs 50 as profit respectively. Find out the product mix of P1 and P2 so as to maximize profit. [10]

SECTION D: CASE STUDY (15 MARKS)

16. Read the case given below and answer the following questions:

FMS at Yamazaki Mazak

The Japanese tool manufacturers, Yamazaki, have, in their European factory, one of the most advanced machine tool manufacturing operations in Europe. Their four FMS (flexible manufacturing systems) allow overnight unstaffed production and so allow the company to make the most from its investment. Of course, the Yamazaki products are built by Yamazaki FMS systems. With a wide range of over 60 products, individual volumes are small. Because of this, the company wanted an operation that would be so flexible it would not matter in which order items were processed. High utilization would be maintained by having very fast set-ups, which would also reduce the need for large batches. The operation can make individual pieces to suit the tight production schedules. This enables the company to offer typical order lead-times of only four weeks, in comparison with competitors' lead-times of eight or more weeks for similar products. All component workpieces are loaded into fixtures (container) mounted on special pallets (flat space to keep something). The operators prepare enough work to enable the system to run overnight unsupervised. At the centre of the FMS is a host computer which schedules and controls the activity of each machining centre and the materials-handling devices. The computer predetermines the pallet locations and, as the machining centres become free, an automatic pick/load device will select the next workpiece from the waiting queue and will place it into the available machine. Each machine is capable of handling almost any of the components so that bottlenecks do not develop at any point in the system. Spare tools used for the machining centres are stored in a central tool bank at the ends of the area and are transported to the required machine by a holding device on a highway which runs above the machining centres. At the end of the shift, the incoming operator can consult the computer for a printout of the tools that may need to be replaced in the tool bank. Many of the materials are delivered from the warehouse to the factory, which pick up the items when requested by the central scheduling system.

Questions:

- What seem to be the benefits of Yamazaki's investment in its highly automated plant? [5]
- What, according to you, are the main problems with unstaffed overnight operation, and what has Yamazaki done to avoid them? [5]
- What type of flexibility does Yamazaki's FMS give them? [5]

THE END

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R.No.

Subject: Operation Research
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Course Code: MGT 471
Time: 3:00 Hours

SECTION A: MULTIPLE CHOICE QUESTIONS (1 × 15 = 15 MARKS) / (TIME: 15 MINUTES)

Tick the best answers.

1. Which one statement best describes the meaning of operation management?
 - a. It is management of raw and processed materials.
 - b. It is a factory management science.
 - c. It deals with planning, executing and controlling of goal based production functions.
 - d. It deals with satisfying customers.
2. Scientific management theory supports one of the following principles of management
 - a. Socio-psychological approach to management
 - b. Socio-technical system
 - c. Specialization and standardization
 - d. Humanistic approach to work design
3. Which one is the objective of operation management?
 - c. To keep people motivated
 - d. Designing reward system
 - c. To maintain and improve the quality
 - d. Enhancing the sales efforts
4. Why did Easy Jet start selling seats online?
 - a. To improve the quality of service
 - b. To minimize the cost of operation
 - c. To increase the sales of service
 - d. To come to the competitive edge
5. In which system materials, should process and design be continuously changed?
 - a. Intermittent system
 - b. Continuous system
 - c. Both
 - d. None of the above
6. Prototype testing is done during the following step:
 - a. Concept design
 - b. Experimentation
 - c. Marketing testing
 - d. Commercialization
7. What may be the basic competitive priority for a mass production company?
 - a. Flexibility
 - b. Cost
 - c. Quality
 - d. Both a and c
8. Maximum capacity under actual condition is:
 - a. Design capacity
 - b. Effective capacity
 - c. Actual capacity
 - d. Efficiency
9. What is the correct formula of capacity utilization?
 - a. The ratio of actual output to design output
 - b. The ratio of actual output to effective capacity
 - c. The ratio of effective capacity to design capacity
 - d. The ratio of design capacity to effective capacity

10. Which one type of layout do you normally find in manufacturing aeroplane?
- a. Process layout
 - b. Product layout
 - c. Mixed layout
 - d. Fixed layout
11. Which one of the following statements is correct?
- a. All factors of production are equally important in all locations
 - b. Factoring rating in location decision is subjective decision
 - c. Material cost has the highest priority in location decision.
 - d. Weights of factors are based on relative importance of each of them in a particular location.
12. Aggregate planning is typically a:
- a. long term plan
 - b. medium term plan
 - c. short term plan
 - d. daily plan
13. Which one of the following reasons contribute to layout?
- a. It has a direct impact on production efficiency.
 - b. It has an impact on workplace psychology.
 - c. It also determines the control on unnecessary movement of labour.
 - d. All of the above
14. Which one is the input of material requirement planning?
- a. Order release report
 - b. Bills of materials
 - c. MRP computer program
 - d. All of the above
15. Which one is not the waste under JIT or Kaizen?
- a. Overproduction
 - b. Stocks
 - c. Motion
 - d. Documentation of report

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R.No.

Subject: Taxation in Nepal
Full Marks: 100 Pass Marks: 50

Course Code: MGT 473
Time: 3:00 Hours

SECTION A: MULTIPLE CHOICE QUESTIONS (1 × 15 = 15 MARKS) / (TIME: 15 MINUTES)

Tick the best answers

1. A businessman purchased goods for Rs. 10,000 and incurred Rs 1,000 as an administrative cost. The goods was sold to the customer charging 20% profit on cost. The value added by the businessman was;
 - a. Rs. 3200
 - b. Rs. 4400
 - c. Rs.3400
 - d. Rs.4000
2. The prevailing rate of VAT in Nepal is;
 - a. 10%
 - b. 12%
 - c. 14%
 - d. 13%
3. "The taxation system should be simple to understand and apply" This statement is related to;
 - a. canon of neutrality
 - b. canon of equity
 - c. canon of simplicity
 - d. canon of diversity
4. Which one of the followings is not a form of direct tax?
 - a. Income tax
 - b. Custom duty
 - c. Property tax
 - d. Vehicle tax
5. Which one is the objective of the Income Tax Act 2058?
 - a. To integrate the Nepalese Taxation System with modern taxation in the world.
 - b. To harmonize the tax rate in equity ground.
 - c. To make a tax-friendly environment in the country
 - d. All of the above
6. For the vehicle and accommodation facility provided by the office is required to be included in the income;
 - a. 1% and 4% of the current salary
 - b. 0.5% and 2% of current salary
 - c. 1% of the market value of the car and 25% of prevailing rent
 - d. None of the above
7. One individual can get an exemption for life insurance maximum up to;
 - a. Rs.20,000
 - b. Rs.30,000
 - c. Rs.25,000
 - d. Rs.15,000
8. The depreciation basis value for the machinery pool was Rs. 500,000. The allowable depreciation would be;
 - a. Rs.100,000
 - b. Rs.125,000
 - c. Rs.75,000
 - d. Rs. 25,000

9. A manufacturing company has earned a taxable income of Rs. 12,00,000. The amount of tax liability would be.
- a. Rs.240,000
 - b. Rs. 175,000
 - c. Rs.250,000
 - d. Rs.144,000
10. Which of the followings is non-deductible expense under the Income Tax Act 2058?
- a. Cost of trading stock
 - b. Depreciation
 - c. Personal and domestic expenses
 - d. Pollution control cost
11. Generally, an entity running a special industry is taxed at a flat rate of ...
- a. 5%
 - b. 15%
 - c. 20%
 - d. 25%
12. Accounting system used to record the employment income of an individual is:
- a. accrual basis system
 - b. cash basis system
 - c. hybrid system
 - d. none of the above
13. Mrs. Sunita a professional person has earned a taxable income of Rs 10,00,000.His tax liability would be;
- a. Rs.120,000
 - b. Rs.130,000
 - c. Rs.140,000
 - d. Rs.250,000
14. Mr. Umesh, a sole proprietor has earned a taxable income of Rs. 12,00,000. His tax liability would be;
- a. Rs.250,000
 - b. Rs.280,000
 - c. Rs. 200,000
 - d. Rs.164,000
15. The rate of depreciation for the building group is;
- a. 5%
 - b. 15%
 - c. 20%
 - d. 25%

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SECTION B: SHORT ANSWER QUESTIONS (8 × 5 = 40 MARKS)

Answer any **EIGHT** questions:

1. Define direct tax with a suitable example.
2. Briefly explain the canon of equity and diversity.
3. Enumerate the feature of the Income Tax Act 2058.
4. Enumerate non-deductible expense under the Income Tax Act 2058.
5. What do you mean by value-added tax? Discuss
6. Enumerate the objectives of the Income Tax Act. 2058.
7. Briefly explain the provision depreciation under the Tax Act.2058.
8. Huda Company Limited has provided the following pieces of information.

Particulars	Block C	Block D
Beginning depreciation basis value	10,00,000	20,00,000
Purchase a computer on Bhadra	400,000	-
Purchase of motorbike on Ashadh	-	300,000
Disposal for the year	100,000	200,000

Required: Allowable depreciation and opening WDV for the next year.

9. An importer has imported goods costing Rs. 10,000. He has not paid any amount of VAT on input. The product passes through two middlemen: a wholesaler and a retailer before reaching the final consumer. The importer wholesaler, and retailer incurred Rs. 500, Rs. 400, and Rs. 300 respectively for administration expenses and charged 20% profit on their cost price.

Required:

- a. Cost price to the consumer. [2.5]
 - b. Total VAT payable by the consumer. [2.5]
10. Mrs. Sirjana, a disabled person who is an employee of the Nepal government, earned taxable income before exemption of Rs.12,00,000. She worked in a remote area class B and claimed a health insurance premium of Rs.21,000. She also claimed medical expenses of Rs.6,000
Required: Tax payable by Mrs. Sunita [5]

SECTION C: LONG ANSWER QUESTIONS (3 × 10 = 30 MARKS)

Answer any **THREE** questions:

11. What do you mean by "self-assessment of tax" ? State the provision in this regard. [10]
12. Briefly explain the provision of loss set off and carry forward of losses under the Income Tax Act. 2058. [10]
13. The followings are the incomes and expenditures of Mr. Kamal for the previous year.
 - Income from natural resources Rs.510,000 (after TDS)
 - Royalty received Rs.900,000
 - Dividend from NABIL Bank Rs. 190,000

- Interest on fixed deposit Rs.85,000 (Net)
- Gain on sale of the share of a listed company Rs. 200,000
- Interest from private party Rs.300,000
- Assessable income from business Rs. 9,00,000

He has claimed the following deduction

- Expenses of natural resources Rs.24,000
- Royalty collection cost Rs. 18,000
- Dividend collection charge Rs.1500
- Personal and domestic expenses 700,000

Required:

- Assessable income from investment
- Statement of total income and tax liability

[8+2]

14. Followings are the performance results of Butwal Company Pvt. Ltd. for different years:

Year	1	2	3	4	5	6
Profit (Loss) Rs.	(200,000)	(140,000)	170,000	240,000	250,000	300,000

On investigation, it is found that the profit of year 3 was calculated without charging depreciation expense of Rs. 50,000 and before including dividend income of Rs. 30,000. The commission income Rs. 60,000 was not included in year 4. In year 5, the company had charged a donation of Rs. 150,000 given to Pasupathi Area Development Trust with pre-approval from IRD.

Required: Taxable income with an explanation.

[8+2]

15. Mr. Mohan was appointed to government service on 1st Shrawan 2075 at a pay scale of Rs. 50,000 – 1000 – 70,000. In addition to salary, he also reported the following.

- Conveyance allowance of 10% of annual salary.
- Learner ship allowance of Rs.70,000.
- Accommodation and vehicle facilities were provided by the office.
- Meeting allowance of Rs.8,500 (after TDS)
- Food allowance Rs. 5,000 per month
- Examiner ship remuneration Rs. 25,500 (net)
- Life insurance premium paid by the employer of Rs.35,000 on a policy of Rs.500,000.
- During the previous year he had received royalty income of Rs.200,000 and Rs.47,500 interest from bank deposits.

Required:

- Assessable income from employment
- Statement of total income
- Tax liability

[6 +2 +2]

SECTION D: CASE STUDY (15 MARKS)

16. Mr. Mahat a sole trader provides the following Trading & Profit and Loss Account for the previous income year.

Dr.		Trading & Profit and Loss A/C		Cr.	
Particulars	Rs.	Particulars	Rs.		
To Opening stock	Nil	By Sales	50,00,000		
To Purchases	15,00,000	By Bad debts recovered	40,000		

To Wages paid	50,000	By Commission received	1,00,000
To Freight inwards	20,000	By Gain on sale of business assets	2,00,000
To Salaries	4,00,000	By Discount received	35,000
To Provision for income tax	1,10,000	By House rent (after TDS Rs. 3,000)	27,000
To Entertainment expenses	50,000	By Dividend from a resident company (net)	95,000
To Interest expenses	80,000	By Miscellaneous incomes	1,50,000
To Provision for bad debts	10,000	By Exchange gain	50,000
To Provision for contingency	20,000	By Closing stock	5,50,000
To Pollution control cost	5,00,000		
To R & D cost	2,00,000		
To Donation	1,25,000		
To Repairs	50,000		
To Depreciation	2,00,000		
To Legal expenses	50,000		
To Office expenses	80,000		
To Staff welfare expenses	60,000		
To Sundry expenses	3,00,000		
To Net profit	24,45,000		
	62,50,000		62,50,000

Additional information:

- 40% of bad debts recovered were not allowed for deduction previously.
- Closing stock was overvalued by Rs. 50,000.
- Opening stock was valued at Rs. 4,00,000, however, it did not appear on the opening date.
- Purchase includes Rs. 1,00,000 incurred to purchase a machine.
- Assesses could not produce evidence for Rs. 10,000 of interest expenses.
- Donation was given to a public school .
- Allowable repairs and depreciation were Rs. 60,000 and Rs. 2,40,000 respectively.
- Unabsorbed business loss of last 3rd year was Rs. 10,11,000.

Required:

- a. Assessable income from business
- b. Statement of taxable income.
- c. Tax Liability

[9 + 4 + 2]

THE END