

**C-3983**

**Sub. Code**

**92111**

**M.B.A. DEGREE EXAMINATION**

**HEALTH SERVICE MANAGEMENT**

**APRIL 2021 EXAMINATION**

**&**

**APRIL 2020 ARREAR EXAMINATION**

**First Semester**

**HEALTH MANAGEMENT PROCESS AND BEHAVIOUR**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is Business Management?
2. What is a Profession?
3. Define MBO.
4. What is Organisation Design?
5. Define Strategy.
6. Define Personality.
7. What is Power?
8. Define Organizational Development.
9. Define Benchmarking.
10. What is innovation?

**Part B**

(5 × 5 = 25)

Answer **all** questions, by choosing either (a) or (b).

11. (a) Discuss in detail about scientific management theory.

Or

- (b) Explain the levels of Management and their functions.

12. (a) Explain scope, limitations and characteristics of a sound planning.

Or

- (b) Define Perception and explain the process of Perception.

13. (a) Describe external and internal factors influencing organizational structure.

Or

- (b) Describe the factors which include the stress of a Person in an Organization.

14. (a) Describe the objectives and importance of job performance.

Or

- (b) Describe the concept of Stress Management.

15. (a) List the characteristics of a Leader.

Or

- (b) Explain the concept of Entrepreneurial Management.

**Part C**

(3 × 10 = 30)

Answer **all** questions, by choosing either (a) or (b).

16. (a) Explain the various forms of organization structure in Hospital.

Or

- (b) Define Organisation and discuss its components.

17. (a) Contrast the Maslow's Need Hierarchy Theory and Herzberg's Two Factor Theory of Motivation.

Or

- (b) What do you mean by organizational change? What are the parameters determining scope of change in an organization.

18. (a) Define leadership. Explain the styles of leadership.

Or

- (b) Explain various HR applications in hospitals.

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**C-3984**

**Sub. Code**

**92112**

**M.B.A. DEGREE EXAMINATION**  
**HEALTH SERVICE MANAGEMENT**  
**APRIL 2021 EXAMINATION**  
**&**  
**APRIL 2020 ARREAR EXAMINATION**  
**First Semester**  
**BASICS OF ACCOUNTING**  
**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is financial accounting?
2. What is double entry system?
3. What is ledger?
4. What is cashbook?
5. What is Gross profit?
6. What is inflation accounting?
7. What is Current ratio?

8. What fund flow ratio?
9. What is prime cost?
10. What is marginal costing?

**Part B**

(5 × 5 = 25)

Answer **all** questions by choosing either (a) or (b).

11. (a) What are the objectives of accounting?

Or

(b) Give the journal entries of the following transaction.

1. Ajit started business by investing cash Rs. 50,000.  
He bought good of Rs. 4,000 and furniture of Rs. 500
2. Purchased building for Rs. 10,000
3. Purchased goods for cash Rs. 3,000
4. Purchased goods on credit Rs. 2,500
5. Paid cartage Rs. 20
6. Sold goods for cash Rs. 2,550
7. Sold goods for cash to Avtar Rs. 240
8. Sold goods to Mahendran on credit Rs. 4,650
9. Paid freight Rs. 120
10. Deposited cash into bank Rs. 8,000
11. Paid salary Rs. 460
12. Withdraw from the bank Rs. 200 for office use
13. Withdraw from the bank Rs. 300 for private use
14. Charged interest on capital Rs. 1,250

12. (a) Distinguish between profit and loss account and balance sheet.

Or

- (b) From the following balances, taken from the books of M/s Dwarka Parshad and Sons as at 31<sup>st</sup> March 2017, prepare a Trial Balance in proper form.

Particular	Amount
Cash in hand	4,500
Bank overdraft	8,000
Opening stock	20,000
Purchases	80,000
Purchases returns	2,000
Sales	1,30,000
Sales returns	5,000
Travelling expenses	1,800
Discount allowed	600
Discount received	1,500
Machinery	24,000
Land and buildings	50,000
Debtors	18,400
Creditors	8,500
Bills receivable	2,850
Bills payable	1,650
Capital	60,000
Drawings	6,000
Rent	3,700
Salaries	3,600
Loan (Cr.)	10,000
Interest on loan	1,200

13. (a) What are the various classification of assets?

Or

(b) Following are the ledger balance presented by M/s. P.Sen as on the 31<sup>st</sup> March 2018. Prepare Final a/c

Particular	Amount
Stock	10,000
Purchases	1,60,000
Carriage inward	10,000
Wages	30,000
Freight	8,000
Sales	3,00,000
Return inward	16,000
Return outward	10,000
Royalty on production	6,000
Gas and fuel	2,000

Additional information:

- (i) Stock on 31.3.2018 : (1) Market price Rs. 24,000 (2) Cost price Rs. 20,000.
- (ii) Stock valued Rs. 10,000 were destroyed by fire and insurance company admitted the claim to the extent of Rs. 6,000
- (iii) Goods purchased for Rs. 6,000 on 29<sup>th</sup> March 2018, but still lying in-transit, not at all recorded in the books.
- (iv) Drawings of goods by the proprietor for his own use for Rs. 3,000
- (v) Outstanding wages amounted to Rs. 4,000
- (vi) Freight was paid in advance for Rs. 1,000.

14. (a) What is meant by Ratio analysis? Discuss its objects.

Or

- (b) What are the uses of funds flow statement?
15. (a) Distinguish between controllable and non-controllable costs.

Or

- (b) What are the advantages of marginal costing?

**Part C** (3 × 10 = 30)

Answer **all** questions choosing either (a) or (b).

16. (a) Explain various accounting concepts and conventions.

Or

- (b) Enter the following transaction in ledger.

2018		Rs.
Jan. 1	Bought goods from Das	1,000
2	Sold goods to Sen	4,000
3	Sold goods to Ramesh	250
5	Bought goods from Suresh	200
7	Sold goods for A for cash	300
8	Received goods returned by Sen	50
9	Purchased goods from Shyam	600
10	Returned goods to Suresh	100
11	Sold goods to Roy	800
12	Roy returned us goods	200



2018		Rs.
13	Sold goods to Ram	300
15	Bought goods from Naresh	650
17	Returned goods to Naresh	150
18	Sold goods to Bhatnagar	700
20	Bought goods from Katju	850
21	Purchased furniture from Vijay steel Co. for cash	1,000
22	Sold goods to Dhiren	260
25	Bhatnagar Return use goods	200
29	Dhiren returns us goods	180
31	Returned goods to Katju	275

17. (a) From the following balance of Mr. Agarwal, you are required to prepare a trading and profit and loss account for the year ended 31<sup>st</sup> Dec. 2003 and a balance sheet as on that date making necessary adjustments.

Particulars	Amount (Rs.)
Purchases	1,20,500
Stock on 1.1.03	21,500
Salaries	14,000
Rent and rates	3,000
Insurance	800
General expenses	3,100
Wages	25,000
Machinery	31,000

Particulars	Amount (Rs.)
Sundry debtors	20,000
Cash at bank	3,000
Drawing	7,000
Capital	52,000
Sales	1,86,000
Sundry creditors	10,000

Adjustments :

- (i) Salaries for the month of December still unpaid Rs. 1,600
- (ii) Insurance prepaid to the extent of Rs. 250
- (iii) Depreciation on machinery by 10%
- (iv) Closing stock was valued at Rs. 26,000.

Or

- (b) What is Trading account? Explain with a specimen form.

18. (a) Enter the following transaction in the cash book with cash, discount and bank, columns.

2018

- April 1 Balance of cash in hand Rs. 400, overdraft at bank Rs. 5,000
- 4 Invested further capital Rs. 10,000 out of which Rs. 6,000 deposited in the bank
- 5 Sold goods for cash Rs. 3,000
- 6 Collected from debtors of last year Rs. 8,000 discount allowed to them Rs. 200
- 10 Purchased goods for cash Rs. 5,500

2018

- 11 Paid ram Vilas, our creditors, Rs, 2,500,  
discount allowed by him Rs. 65
- 13 Commission paid to our agent Rs. 530
- 14 Office furniture purchased from Keshav Rs. 200
- 14 Rent paid Rs. 50
- 14 Electricity charges paid Rs.10
- 16 Drew cheque for personal use Rs. 700
- 17 Cash sales Rs. 2,500
- 18 Collection from Atal Rs. 4,000, deposited in  
the bank on 19<sup>th</sup> April
- 19 Drew from the bank for office use Rs. 500
- 22 Drew cheque for petty cash Rs. 150

Or

- (b) What is a cost sheet? Give a specimen of cost sheet and explain the different items included in it.

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**C-3985**

**Sub. Code**

**92113**

**M.B.A. DEGREE EXAMINATION**  
**HEALTH SERVICE MANAGEMENT**  
**APRIL 2021 EXAMINATION**  
**&**  
**APRIL 2020 ARREAR EXAMINATION**  
**First Semester**  
**HEALTH ECONOMICS AND POLICY**  
**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is Economics?
2. Define market.
3. Define law of demand.
4. Define elasticity of demand.
5. Define monopoly.
6. What is perfect competition?
7. What is health policy?
8. What is national health policy?

9. What is health expenditure?
10. What is control?

**Part B**

(5 × 5 = 25)

Answer **all** questions by choosing either (a) or (b).

11. (a) Explain the determinants of health economic policy.

Or

- (b) Explain the role of government in health care in India.

12. (a) Discuss the determinants of demand and supply.

Or

- (b) Explain the steps in demand forecasting techniques.

13. (a) Explain the emerging trends in corporate structure.

Or

- (b) What are the essential characteristics of an Entrepreneur?

14. (a) Define leadership. Discuss various leadership activities in a hospital.

Or

- (b) What are the different types of values?

15. (a) Describe the principles of organizational creativity.

Or

- (b) Explain the concept of management of diversity.

**Part C**

(3 × 10 = 30)

Answer **all** questions by choosing either (a) or (b).

16. (a) Describe external and internal factors influencing organizational structure.

Or

- (b) What do you mean by organizational change? What are the parameters determining scope of charge in an organization.
17. (a) Explain the various forms of organization structure in Hospital.

Or

- (b) Describe the concept of stress management.
18. (a) What are the major functions of management?

Or

- (b) Define leadership. Explain the styles of leadership.
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**C-3987**

**Sub. Code**

**92115**

**M.B.A. DEGREE EXAMINATION**

**HEALTH SERVICE MANAGEMENT**

**APRIL 2021 EXAMINATION**

**&**

**APRIL 2020 ARREAR EXAMINATION**

**First Semester**

**HEALTH MANAGEMENT INFORMATION SYSTEM**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define DSS.
2. What is data warehousing?
3. Define data mining.
4. What are developing indicators?
5. What are structured and unstructured information?
6. What are software metrics?
7. List the components of information system.
8. What are the functions of marketing information system?
9. What is technical feasibility?
10. List out some advantages of MIS.

**Part B**

(5 × 5 = 25)

Answer **all** questions, by choosing either (a) or (b).

11. (a) Role of MIS in hospital store management.

Or

- (b) Explain various phases of data mining.

12. (a) Briefly explain some common threats to computerized information system.

Or

- (b) Describe the advantages and disadvantages of DBMS in health care sector.

13. (a) List out the security issues of e-business.

Or

- (b) Briefly explain the various stages of developing computerized system.

14. (a) List out the Ethical issues in information management.

Or

- (b) Describe functional information system.

15. (a) Describe the application of MIS in hospital store management.

Or

- (b) Explain the types of Decision Support System.



**Part C**

(3 × 10 = 30)

Answer **all** questions, by choosing either (a) or (b).

16. (a) Describe the role, advantages and disadvantages of DBMS in health care sector.

Or

- (b) Describe in details about E-business and E-governance.

17. (a) Use of computers for MIS database management.

Or

- (b) Explain various stages of developing computerized system.

18. (a) How the risk is assessed and managed in information system? Explain the various risk assessment methodologies and tools.

Or

- (b) Describe in detail about concept of MIS and its applications.

**C-3988**

**Sub. Code**

**92116**

**M.B.A. DEGREE EXAMINATION**  
**HEALTH SERVICE MANAGEMENT**  
**APRIL 2021 EXAMINATION**  
**&**  
**APRIL 2020 ARREAR EXAMINATION**

**First Semester**

**CORPORATE FINANCE AND MANAGEMENT**  
**ACCOUNTING**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is meant by financial management?
2. Write a note on time value of money.
3. Define payback period.
4. Write a note on NPV.
5. What is meant by capitalization?
6. What do you understand by dividend policy?
7. Define credit policy.
8. What is cash management?
9. Write a note on debenture.
10. What is meant by capital market?

**Part B**

(5 × 5 = 25)

Answer **all** questions, by choosing either (a) or (b).

11. (a) Discuss the objectives of financial management.

Or

- (b) Explain about Tradeoff between risk and return.

12. (a) What are the objectives of a capital expenditure budget?

Or

- (b) An equipment requires an initial investment of Rs. 60,000. The annual cash flow is estimated at Rs. 15,000 for 5 years. Calculate the internal rate of return.

13. (a) Explain the optimal capital structure.

Or

- (b) Distinction between stock split and stock dividend.

14. (a) Write down the objectives of cash management.

Or

- (b) From the following information calculate the optimum cash balance on the basis of Baumol model :

Monthly cash requirements                      Rs. 60,000

Fixed cost per transaction                      10

Interest rate on marketable securities      6%

15. (a) Explain the limitation of financial statement.

Or

- (b) Explain the importance of hire purchase system.

**Part C**

(3 × 10 = 30)

Answer **all** questions, by choosing either (a) or (b).

16. (a) Explain the various techniques used for incorporating risk factor in capital budgeting decisions.

Or

- (b) You are required to find out the net present worth of the following projects, assuming that the cost of capital is 10% and the initial investment is Rs. 1,600 each.

Year	Project A Net cash flows Rs.	Project B Net cash flows Rs.
1	800	200
2	800	400
3	400	400
4	200	400
5	—	600
6	—	800

17. (a) Enumerate the different types of working capital policy and explain the principles of working capital management.

Or

- (b) AB Ltd., has a policy of maintaining cash balance of Rs. 3,00,000. The standard deviation of the firm's daily cash flows is Rs. 1,00,000. The annual interest rate is 10 per cent. The transaction cost of buying and selling securities is Rs. 100 per transaction. Compute the upper control limit and return point of AB Ltd. Under Miller-Orr model.

18. (a) What do you meant by new issue market? Explain its functions and methods of floating new issues.

Or

- (b) Discuss the advantages and limitations of comparative financial statement analysis.
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**C-3989**

**Sub. Code**

**92121**

**M.B.A. DEGREE EXAMINATION**

**HEALTH SERVICE MANAGEMENT**

**APRIL 2021 EXAMINATION**

**&**

**APRIL 2020 ARREAR EXAMINATION**

**Second Semester**

**RESEARCH METHODOLOGY AND STATISTICS**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is Research Design?
2. What is Sealing?
3. What is Deliberate Sampling?
4. What is Quota Sampling?
5. What is Null Hypothesis?
6. What is Research Proposal?
7. What are Primary Data?
8. What is Harmonic Mean?
9. What is Chi square distribution?
10. What is Report Writing?

**Part B**

(5 × 5 = 25)

Answer **all** questions, by choosing either (a) or (b).

11. (a) Briefly explain sources of error in measurement.

Or

- (b) Discuss about the steps for formulating a research problem.

12. (a) Discuss the merits and demerits of Quota sampling.

Or

- (b) Discuss in detail about characteristics of secondary data.

13. (a) Briefly discuss about the basic principles of experimental design.

Or

- (b) Discuss about the limitation for hypothesis testing.

14. (a) Explain about Observation method.

Or

- (b) Discuss about the Interview method.

15. (a) Briefly discuss about the Partial correlation.

Or

- (b) Discuss about principles of good research report.

**Part C**

(3 × 10 = 30)

Answer **all** questions, by choosing either (a) or (b).

16. (a) Discuss in detail about research process.

Or

- (b) Explain about steps in sampling design.

17. (a) Discuss in detail about types of sampling design.

Or

- (b) Discuss in detail about important and various types of research design.

18. (a) Briefly explain about the measure of central tendency.

Or

- (b) Discuss in detail about different steps in writing report.
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**C-3990**

**Sub. Code**

**92122**

**M.B.A. DEGREE EXAMINATION**  
**HEALTH SERVICE MANAGEMENT**  
**APRIL 2021 EXAMINATION**  
**&**  
**APRIL 2020 ARREAR EXAMINATION**  
**Second Semester**  
**MATERIALS MANAGEMENT**  
**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is material planning?
2. Define ABC analysis.
3. What is Eco friendliness packaging?
4. What is arbitration in purchasing?
5. What is equipment auditing?
6. What is demand management?
7. Define EOQ.
8. What is codification?
9. Define: Retail discounting model.
10. Define: Bill of materials.

**Part B**

(5 × 5 = 25)

Answer **all** questions, by choosing either (a) or (b).

11. (a) Write short notes on planning and selection of equipment.

Or

- (b) Briefly describe about purchase procedures.

12. (a) Explain waste management in packaging.

Or

- (b) Standardization of inventory management.

13. (a) Describe legal aspects of purchasing.

Or

- (b) List out objectives of materials management.

14. (a) Briefly explain the steps involved in materials requirement planning.

Or

- (b) Explain the principles of effective material handling.

15. (a) Explain material inventory control.

Or

- (b) Problems and issues in materials management in hospitals.

**Part C**

(3 × 10 = 30)

Answer **all** questions, by choosing either (a) or (b).

16. (a) Describe concept of packaging.

Or

- (b) Describe the functions of Material Managers.

17. (a) Briefly explain about distribution of materials.

Or

- (b) Explain the steps involved in materials requirement planning.

18. (a) Describe Inspection and verification of Materials.

Or

- (b) Explain the different methods of price determination.

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**C-3991**

**Sub. Code**

**92123**

**M.B.A. DEGREE EXAMINATION**  
**HEALTH SERVICE MANAGEMENT**  
**APRIL 2021 EXAMINATION**  
**&**  
**APRIL 2020 ARREAR EXAMINATION**  
**Second Semester**  
**MARKETING MANAGEMENT AND**  
**HEALTH CARE SERVICES MARKETING**  
**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define marketing.
2. What is marketing mix?
3. Define marketing information system.
4. Define market segmentation.
5. Define simple marketing system.
6. What is penetrative pricing?
7. List any four strategies for health care service marketing.
8. What is customer retention?
9. What is market positioning?
10. What is sales promotion?

**Part B**

(5 × 5 = 25)

Answer **all** questions, by choosing either (a) or (b).

11. (a) Describe the advantages of online business.

Or

- (b) Describe the concepts of marketing.

12. (a) Discuss various methods of Pricing.

Or

- (b) Short notes on various promotional tools used in the promotion of health care services.

13. (a) Advantages and disadvantages of online buying process.

Or

- (b) Explain the marketing environment factors for the health care services.

14. (a) List out the remedies to provide consumer satisfaction.

Or

- (b) Briefly describe the benefits of integrated strategic marketing plans.

15. (a) Write short notes on market segmentation.

Or

- (b) What is service marketing? List out its characteristics.

**Part C**

(3 × 10 = 30)

Answer **all** questions, by choosing either (a) or (b).

16. (a) Explain strategic marketing planning.

Or

- (b) Explain in detail on service encounter.

17. (a) Describe environment analysis.

Or

- (b) Describe advertising strategies for health care services.

18. (a) Describe role of IT in health care marketing.

Or

- (b) Describe marketing research. List out the benefits of marketing research in promotion of health care services.
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**C-3992**

**Sub. Code**

**92124**

**M.B.A. DEGREE EXAMINATION**  
**HEALTH SERVICE MANAGEMENT**  
**APRIL 2021 EXAMINATION**  
**&**  
**APRIL 2020 ARREAR EXAMINATION**  
**Second Semester**  
**OPERATIONS MANAGEMENT — I**  
**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define code Blue.
2. List four merits of EMR.
3. Define Medical Record Retrieval.
4. List the importance of ward rounds.
5. Define staff appraisal.
6. Define infection.
7. Define biomedical wastes.
8. What is deficiency check?
9. Define grievance handling.
10. Define pest control.

**Part B**

(5 × 5 = 25)

Answer **all** questions, by choosing either (a) or (b).

11. (a) Briefly describe biomedical waste management.

Or

- (b) Write short note on layout of Medical Record section.

12. (a) Describe procedure of handling MLC cases.

Or

- (b) Discuss the need of staff training.

13. (a) Write short note on ambulance service.

Or

- (b) Describe the importance of hospital sanitation.

14. (a) Explain the patient service at front office.

Or

- (b) Describe the Code of conduct.

15. (a) Describe the need of staff welfare.

Or

- (b) Describe the functions of Radiology department.

**Part C**

(3 × 10 = 30)

Answer **all** questions, by choosing either (a) or (b).

16. (a) Describe the role and responsibilities of ICU care nurse.

Or

- (b) Describe the functions of Cardiology department.



17. (a) Describe the various forms of medical negligence.

Or

(b) Explain the layout and design of front office.

18. (a) Describe the Admission and Discharge procedures.

Or

(b) Describe the designing and layout of Medical Records section.

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**C-3993**

**Sub. Code**

**92125**

**M.B.A. DEGREE EXAMINATION**  
**HEALTH SERVICE MANAGEMENT**  
**APRIL 2021 EXAMINATION**  
**&**  
**APRIL 2020 ARREAR EXAMINATION**  
**Second Semester**  
**HEALTH CARE AND WELLNESS**  
**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define Communicable disease.
2. Define Allopathy.
3. What is CPR?
4. Define sterilization.
5. What are manmade disasters?
6. Define pulse.
7. Define natural calamity.
8. Components of blood.
9. List the endocrine glands.
10. Define diabetes.

**Part B**

(5 × 5 = 25)

Answer **all** questions, by choosing either (a) or (b).

11. (a) Draw a neat diagram of male reproductive system and label the parts.

Or

- (b) Explain about the Ayurveda medicines.

12. (a) Describe immunization schedule.

Or

- (b) Briefly describe the principles of epidemiology.

13. (a) Write short note on Non-communicable diseases.

Or

- (b) Briefly describe fire safety.

14. (a) Briefly describe respiratory diseases.

Or

- (b) Determinants of Health.

15. (a) Colour coding system in Hospital waste management.

Or

- (b) Describe sense organs.

**Part C**

(3 × 10 = 30)

Answer **all** questions, by choosing either (a) or (b).

16. (a) Describe communicable diseases.

Or

- (b) Explain endocrine gland disorders.

17. (a) Describe cardiovascular system.

Or

(b) Describe various hospital services.

18. (a) Describe infection control methods in hospital.

Or

(b) Describe various methods of sterilization.

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**C-3994**

**Sub. Code**

**92126**

**M.B.A. DEGREE EXAMINATION**

**HEALTH SERVICE MANAGEMENT**

**APRIL 2021 EXAMINATION**

**&**

**APRIL 2020 ARREAR EXAMINATION**

**Second Semester**

**QUALITY MANAGEMENT IN HEALTH CARE**

**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What do you mean by strategic quality planning?
2. Define Resistance to change.
3. Define QAC.
4. Define TPM.
5. Define Quality for profit.
6. Define retrospective review.
7. Define SQC.
8. Define Peer review.
9. What is Six sigma?
10. Define NABH.

**Part B**

(5 × 5 = 25)

Answer **all** questions, by choosing either (a) or (b).

11. (a) Briefly comment on managing change.

Or

- (b) Explain the method for calculating standard time.

12. (a) List out the benefits of work study.

Or

- (b) Write short notes on QAC.

13. (a) Briefly describe medical audit.

Or

- (b) Describe the importance of synergy in teams work.

14. (a) Write short notes on ISO 9000 system.

Or

- (b) Explain the components of TQM.

15. (a) Explain the need for the quality systems in hospitals.

Or

- (b) Explain about strategic quality planning.

**Part C**

(3 × 10 = 30)

Answer **all** questions, by choosing either (a) or (b).

16. (a) Describe in detail about TPM.

Or

- (b) Explain about approaches and steps in Six sigma.

17. (a) Describe the methods to measure customer satisfaction.

Or

(b) Explain the importance of NABH accreditation to hospitals.

18. (a) Explain about JCI standards.

Or

(b) Explain the benefits of check list in ISO audit.

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**C-3995**

**Sub. Code**

**92131**

**M.B.A. DEGREE EXAMINATION**  
**HEALTH SERVICE MANAGEMENT**  
**APRIL 2021 EXAMINATION**  
**&**  
**APRIL 2020 ARREAR EXAMINATION**  
**Third Semester**  
**OPERATIONS RESEARCH**  
**(2016 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define operations research.
2. What are the advantages of simplex method?
3. Enumerate the characteristics of LPP.
4. What is initial feasible solution?
5. Explain the transportation method.
6. What do you mean by Hungarian method of assignment?
7. Define assignment problem.
8. What is PERT used for?
9. What are the four main characteristics of waiting lines which determine the queuing model?
10. Discuss the different types of simulation models.



**Part B**

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the role of operations research.

Or

- (b) Describe the assumptions made in linear programming.

12. (a) Determine an initial basic feasible solution to the following transportation problem using north-west corner rule and least cost method.

From \ To	D	E	F	Supply
A	6	4	1	50
B	3	8	7	40
C	4	4	2	60
Demand	20	95	35	150

Or

- (b) Write short note on assignment problem and its application.

13. (a) Give below is the information regarding a project.

Activity :	A	B	C	D	E	F	G
Immediate :	-	-	A	A,B	C,D	B,D	E,F
Predecessor :							
Time (days)	2	1	3	2	1	3	1

Draw the network and find the project critical path.

Or

- (b) Write note on application of PERT in health service management.

14. (a) A self service store employs one cashier at its counter. Nine customers arrive on an average every 5 minutes while the cashier can serve 10 customers in 5 minutes. Assuming Poisson distribution for arrival rate and exponential distribution for service time. Find
- (i) Average number of customers in the system.
  - (ii) Average number of customers in the queue or average queue length.
  - (iii) Average time a customer spends in the system.
  - (iv) Average time a customer waits before being served.

Or

- (b) Explain the types of decisions with suitable examples.
15. (a) An ice-cream parlor's record of previous month's sale of particular variety of ice cream as follows (see table).

Simulation of Demand problem.

Demand (No. of Ice-creams)	No.of days
4	5
5	10
6	6
7	8
8	1

Simulate the demand for first 10 days of the month.

Or

- (b) Explain Monte Carlo method and give the situations where these methods are useful.

**Part C**

(3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b).

16. (a) Use graphical method to solve the following problems.

$$\text{Maximize } Z = 2x_1 + 3x_2$$

Subject to constraints

$$x_1 + x_2 \leq 1$$

$$3x_1 + x_2 \leq 4$$

$$x_1, x_2 \geq 0$$

Or

- (b) Solve the following IP problem using the result of its dual problem.

$$\text{Minimize } Z = 24x_1 + 30x_2$$

Subject to:

$$2x_1 + 3x_2 \geq 10$$

$$4x_1 + 9x_2 \geq 15$$

$$6x_1 + 6x_2 \geq 20$$

$$x_1, x_2 \geq 0.$$

17. (a) A small garment making unit has five tailors stitching five different types of garments. All five tailors are capable of stitching all the five types of garment. The output per day per tailor and the profit. (Rs) for each type of garment are given below:

	Tailors	Garments				
		1	2	3	4	5
A		7	9	4	8	6
B		4	9	5	7	8
C		8	5	2	9	8

D	6	5	8	10	10
E	7	8	10	9	9
Profit (Rs) per garment	2	3	2	3	4

- (i) Which type of garment should be assigned to which tailor in order to maximize profit, assuming that there are no other constraints?
- (ii) If tailor D is absent a specified period and no other substitute tailor is available what should be the optimal assignment.

Or

(b) Solve the following transportation problem using

- (i) North west corner rule
- (ii) Least cost method
- (iii) VAM.

From \ To	A	B	C	D	E	Supply
1	20	19	14	21	16	40
2	15	15	–	19	16	60
3	18	20	18	20	–	90
Demand	30	40	70	60	60	

18. (a) Goods trucks arrive randomly at a stockyard with a mean of 8 trucks/hour. A crew of four operatives can unload a truck in 6 minutes. Trucks waiting in queue to be unloaded are paid a waiting charge at the rate of Rs. 60 per hour. Operatives are paid a wage rate of Rs. 20 per hour. It is possible to augment the crew strength to 2 to 3 (of four operative per crew) when the unloading time will be 4 minutes or 3 minutes respectively per truck. Find the optimal crew size.

Or

- (b) A project has the following activities and their durations.

Activity	Time (days)	Preceding activity
A	1	–
B	2	–
C	2	–
D	2	A,B
E	4	B,C
F	1	C
G	4	D
H	8	G,E,F

- (i) Draw the project and indicate the critical path.
- (ii) What is the minimum completion time?
- (iii) During the second day of work it is discovered that activity F will 4 days instead of 1. Will this delay the project? If this activity takes 6 days, will the project be delayed?
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