M.B.A. (General) DEGREE EXAMINATION, APRIL - 2023

Second Semester

Management

BUSINESS RESEARCH METHODS

(CBCS - 2022 onwards)

Time: 3 Hours Maximum: 75 Marks

Part A $(10 \times 1 = 10)$

Answer all questions.

- 1. The conclusions/findings of which type of research cannot be generalized to other situations?
 - (a) Pure research
 - (b) Descriptive research
 - (c) Historical research
 - (d) Experimental research
- 2. What is a function of a literature review?
 - (a) To identify a research problem
 - (b) To demonstrate that you can use the internet
 - (c) To provide a theoretical background for the study
 - (d) To provide reliable research findings

	sampling?					
	(a)	Quota sampling				
	(b)	Convenience sampling				
	(c)	Snowball sampling				
	(d)	Cluster sampling				
4.		asing the sample size has the following effect on the bling error?				
	(a)	It increases the sampling error				
	(b)	It reduces the sampling error				
	(c)	It has no effect on the sampling error				
	(d)	All the above				
5.		h of the following is a method of secondary data etion?				
	(a)	Direct personal investigation				
	(b)	Direct oral investigation				
	(c)	Collection of information through a questionnaire				
	(d)	None of these				
6.	Whic	h one of these is a self-administrated questionnaire?				
	(a)	Postal questionnaire				
	(b)	Personal questionnaire				
	(c)	Face-to-face questionnaire				
	(d)	Telephone questionnaire				
		2 R8077				

Which of the following is not a type of non-probability

3.

- 7. If the Pearson correlation coefficient R is equal to I then:(a) There is a perfect positive relationship between the two variables
 - (b) There is a negative relationship between the two variables
 - (c) There is no relationship between the two variables
 - (d) There is a positive relationship between the two variables
- 8. Simple linear regression method is used
 - (a) To assess whether there is a significant difference between repeated measures
 - (b) To assess whether there is a significant difference between independent groups
 - (c) To predict scores on a dependent variable from scores on a single independent variable
 - (d) To predict scores on a dependent variable from scores on multiple independent variables
- 9. In order to test the equality of population means of two groups when their standard deviations are unknown, we use ______ test.
 - (a) F
 - (b) t
 - (c) z
 - (d) Chi-square test

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	(c)	Sign test		
	(d)	ANOVA		
		Part B		$(5 \times 5 = 25)$
	Aı	nswer all questions, choos	sing either (a) or	(b).
11.	(a)	Write a short note on the	e importance of re	esearch.
		${ m Or}$		
	(b)	Briefly explain the steps of the hypothesis.	involved in the f	ormulation
12.	(a)	What are the essentials	of good sampling	?
		Or		
	(b)	Narrate the difference sampling.	between the c	ensus and
13.	(a)	Give an account of vari	ous scaling tech	niques in a
		Or		
	(b)	State the purpose and ou	atcomes of a pilot	study.
		4		R8077

Which one of the following is a parametric test?

Kruskal Wallis test

Mann-Whitney U test

10.

(a)

(b)

14. (a) Describe the uses of tabulation of data.

Or

(b) Find the arithmetic mean for the distribution of wages in a factory.

Wages in Rs. 59 60 61 62 63 64 No. of. workers 6 7 9 12 18 8

15. (a) Explain the procedure to apply the Chi-square test.

Or

(b) Describe the features of a good research report.

Part C
$$(5 \times 8 = 40)$$

Answer any **five** questions.

- 16. Summarize the various types of research and their applications with examples.
- 17. How to identify and properly formulate the research problem?
- 18. Explain in detail the various methods of probability sampling and their applications.
- 19. Enlighten the difference between schedules and questionnaires.
- 20. As a researcher, construct the questionnaire to assess consumer behavior towards online e-tailers in the rural market.

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21. A sample of 200 persons with a particular disease were selected. Out of these, 100 were given a drug and the others were not given any drug. The result is as follows.

Number of persons	Drug	No Drug	Total
Cured	65	55	120
Not Cured	35	45	80
Total	100	100	200

Test whether the drug is effective or not by using the Chi-square test.

22. Calculate the Karl Pearson's coefficient of correlations from the following data.

Advertisements	39	65	62	90	82	75	25	98	36	78
cost in 1000's										
Sales in lakhs	47	5 3	58	86	62	68	60	91	51	84

23. Elucidate the steps involved in drafting the research report.

M.B.A.(General)DEGREE EXAMINATION, APRIL - 2023

Second Semester

Management

LEGAL ASPECTS OF BUSINESS

(CBCS - 2022 onwards)

Time: 3 Hours Maximum: 75 Marks

Part A $(10 \times 1 = 10)$

Answer all questions.

- 1. The consideration must be
 - (a) Adequate
 - (b) Must be adequate
 - (c) Need not be adequate
 - (d) Substantially adequate
- 2. Consent is defined as
 - (a) Two or more persons are said to consent when they agree.
 - (b) Two more persons are said to consent when they agree upon the same thing in the same sense.
 - (c) Two or more persons are said to consent when they understand the same thing.
 - (d) Two or more persons are said to consent when they agree upon the same thing.
- 3. A contract of indemnity may be called as
 - (a) Quasi-contract
 - (b) Contingent contract
 - (c) Void contract
 - (d) Implied contract

4.	On good		ctor a	gent has the right to sell the						
	(a)	By his own name								
	(b)	By principal name								
	(c)	By the name of the seller								
	(d)	By the name of pu	ırchas	ser						
5.		coluntary transfer son to another is cal	_	ossession of goods from one						
	(a)	Sale	(b)	Purchase						
	(c)	Delivery	(d)	Exchange						
6.		v many rights do sumer protection ac		consumer have under the						
	(a)	8	(b)	4						
	(c)	5	(d)	6						
7.			rved	npensation and refund of to the railway administration s from the date of:						
	(a)	Booking of consignment								
	(b)	Loading of consign	nmen	t						
	(c)	Submission of a fo	rwar	ding note						
	(d)	Entrustment of go	ods.							
8.	The	carriage by Air act	was e	enacted in the year of						
	(a)	1972	(b)	1982						
	(c)	1971	(d)	1991						
9.	Eas	t India Company wa	as an	example of						
	(a)	Public Company								
	(b)	Private Company								
	(c)	Charted Company	7							
	(d)	Foreign Company								
			2	R8078						

	(a)	One	(b)	Tw	0			
	(c)	Three	(d)	For	ur			
		Par	rt B				$(5 \times 5 =$	= 25)
	A	nswer all questions	s, cho	osin	g either (a	a) or	(b).	
11.	(a)	Enumerate the es	senti	al el	ements of	f a va	alid offe	er.
			Or					
	(b)	Who are all no contract? Why?	t co	mpe	tent to	ente	er into	the
12.	(a)	Briefly explain the contract of bailme		ghts	of the b	ailoı	r under	the
			Or					
	(b)	Write a short note	on d	liffer	ent types	of a	gents.	
13.	(a)	Distinguish betwee sell.	een tl	he sa	ale and th	he a	greeme	nt to
			Or					
	(b)	Give an account the consumer prot				onsu	mers u	nder
14.	(a)	Explain the dutie of goods by sea ac			arrier un	der 1	the carı	riage
			Or					
	(b)	Highlights the sa 1865.	ılient	fea	tures of	the	carriers	s act
15.	(a)	What is meant by	pros	pecti	us? Expla	in it	s types.	
			Or					
	(b)	Explain the ty companies act 201		of	resolution	ns _	under	the
			3				R807	78

Under Sec 149 of the Companies Act 2013, every company shall have how many

10.

Part C $(5 \times 8 = 40)$

Answer any **five** questions.

- 16. Explain in detail the various modes of discharge of the contract.
- 17. Discuss the remedies available to an aggrieved party in case of breach of contract.
- 18. Write a detailed note on the rights and duties of an agent.
- 19. Who is a surety? How can a surety be discharged from his liability in a contract of guarantee?
- 20. Enlighten the legal rules regarding the exception of Caveat Emptor.
- 21. Enumerate the procedure to file a complaint under the consumer protection act.
- 22. Summarize the legal responsibilities of a railway administration as a carrier of goods under the Railways Act 1989.
- 23. Elaborate the various clauses of Memorandum of Association.

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M.B.A. (General) DEGREE EXAMINATION, APRIL - 2023

Second Semester

Management

MARKETING MANAGEMENT

(CBCS - 2022 onwards)

Time: 3 Hours Maximum: 75 Marks

Part A $(10 \times 1 = 10)$

Answer all questions.

- 1. Which is not a part of branch concept?
 - (a) Product mix
 - (b) Brand image
 - (c) Brand Franchise
 - (d) Brand recognition
- 2. The marketing concept involves
 - (a) Organisation integration
 - (b) Competition oriented
 - (c) Customer orientation
 - (d) All the above

3.	"Mai	rketing is a human activity directed at satisfying
	need	s and wants through exchange processes."
	(a)	Hansi L.V
	(b)	Philp Kotler
	(c)	Peter F. Drucker
	(d)	D.S. Paule
4.	A br	and is a
	(a)	Product plan
	(b)	Product cost
	(c)	Quality
	(d)	Product or service
5.	Whic	ch is not involved in morden marketing consists
	(a)	Marketing strategy
	(b)	Marketing effectiveness
	(c)	Brand Management
	(d)	Public relation
		2 R8079

6.	AMA s	tand for							
	(a)	American mark	American marketing association						
	(b)	Association mor	e for al	1					
	(c)	Apple money ac	t						
	(d)	All market associ	ciation						
7.	Who	developed the 4	P's of m	narketing?					
	(a)	J.R. Betty	(b)	Hanson					
	(c)	Mc Carthy	(d)	Peter F. Drucker					
8.	Inte	rnet marketing d	oes not	deal					
	(a)	Advertising							
	(b)	Interactive mar	keting						
	(c)	E-mail marketir	ng and	web advertising					
	(d)	Display advertis	sing						
9.		concept of onlir	ne mar	keting is different from the					
	(a)	E-commerce							
	(b)	E-accounting							
	(c)	Commerce							
	(d)	All the above							

10.	. Match the following:									
]	List-	—I	List—II				
		(Ma	rket	ing S	Sub-plans)		(Variab	oles)		
	(A)	Con	tinge	ency	Plan	1	Diversifica	ition		
	(B)	Org	anis	atio	n Plan	2	Public Rel	ations		
	(C)	Tec	hnica	al Pl	an	3	Quality Control			
	(D)	Bas	eline	Res	search	4	Customer	Service		
	Code	es:								
		A	В	\mathbf{C}	D					
	(a)	1	3	2	4					
	(b)	4	2	3	1					
	(c)	2	4	3	1					
	(d)	1	2	3	4					
					Part B			$(5 \times 5 =$	25)	
	Aı	nswei	all	ques	stions, choo	sing	g either (a) o	or (b).		
11.	(a)	Brie	fly e	xpla	in the conc	ept	of marketin	g.		
					Or					
	(b)	Exp.	lain ronn		rospects s.	an	d challer	nges glo	bal	
12.	(a)	Brie	fly n	nark	eting infor	mat	ion system.			
					Or					
	(b)	Exp	lain	mar	keting segn	nen	tation.			
					4			R8079		

13. (a) Deliberate the product planning in the morden marketing.

Or

- (b) Explicate the diversification of product mix.
- 14. (a) Briefly discuss the objectives of price fixation in product.

Or

- (b) Explain the strategy involved in the online market.
- 15. (a) What are way to measure the evaluation of performance in the market?

Or

(b) Methods of sales promotion - Discuss

Part C $(5 \times 8 = 40)$

Answer any **five** questions.

- 16. Determination of theories of consumer behaviour Discuss.
- 17. Discuss the contents of a marketing research report.
- 18. Why is it necessary for a marketer to study the marketing environment? What are the environmental variables to be taken into consideration? Describe in details.
- 19. Explain the customer relationship marketing.

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- 20. Briefly introduced the factor influencing especially for selection of media.
- 21. Outline the stages in new product development.
- 22. Explain various types of attacking strategy.
- 23. Has marketing changed in the connected world"? Discuss the strategy implications of the internet for marketing.

M.B.A. (General) DEGREE EXAMINATION, APRIL – 2023

Second Semester

Management

HUMAN RESOURCES MANAGEMENT

(CBCS - 2022 onwards)

Time	: 3 H	lours	Maximum : 75 Marks
		Part A	$(10 \times 1 = 10)$
		Answer all quest	ions.
1.		focuses his a coving welfare facilities for e	-
	(a)	HR manager	
	(b)	Finance manager	

(d) Adjudicator

Arbitrator

(c)

- 2. While personnel management is mainly concerned with administrative tasks. HRM is —————in nature.
 - (a) Routine
 - (b) Strategic
 - (c) Ordinary
 - (d) Challenging

3.	is a tool to show the internal flow of
	employees within large organisations.
	(a) Replacement chart
	(b) Ratio Analysis
	(c) Work Study
	(d) Markov Analysis
4.	If — is less, lesser human resources would be
	required.
	(a) Retention
	(b) Absenteeism
	(c) Overtime
	(d) Resources
5.	Guiding and advising Junior employees by seniors.
	(a) Committee
	(b) Planned progression
	(c) Reading
	(d) Counselling
	2 R8080

6.	Moving an employee to a higher position in the organisational hierarchy
	(a) Transfer
	(b) Promotion
	(c) Job rotation
	(d) Job analysis
7.	Based on ————— details, the minimum and
	maximum wage ranges are fixed.
	(a) Job evaluation
	(b) Wage
	(c) Salary
	(d) Training
8.	Balanced method combines the features of ———————————————————————————————————
	or and .
	(a) On the job; Off the job
	(b) Job; System
	(c) Time age; Piece rate
	(d) Monetary; Non-monetary
	3 R8080

	(a)	Grievance
	(b)	Industrial Disputes
	(c)	Conflict
	(d)	Imaginary
10.		refer to the relations between employers
	and	employees
	(a)	Industrial dispute
	(b)	Industrial Relations
	(c)	Improved morale
	(d)	Industrial peace
		Part B $(5 \times 5 = 25)$
	A	nswer all questions, choosing either (a) or (b).
l1.	(a)	Discuss the role of HR manger
		Or
	(b)	Distinguish between personnel management and human resource management.
12.	(a)	Explain the factors to consider in human resource planning.
		Or
	(b)	Enumerate the important external sources of recruitment of employees.

----- is a sign of an employee's discontent with

9.

job and its nature.

		Or	
	(b)	Explain the significance and limitation interview.	of employee
14.	(a)	Discuss the causes of labour turnover.	
		Or	
	(b)	Enumerate the wage and salary admini	stration.
15.	(a)	Expound the role of gheraro.	
		Or	
	(b)	Discuss recent trends in HRM.	
		Part C	$(5 \times 8 = 40)$
		Answer any five questions.	
16.	Disc	cuss the structure of human resource de	epartment or
	How	would you organise HR department?	
17.	Exp	lain the steps in man power planning.	
18.	Elak	porately discuss the various sources of rec	ruitment.
19.	Exp	lain the various sources of recruitment.	
IJ.			R8080

Discuss the method and use of interview selection.

13.

- 20. A good transfer policy should satisfy certain requirementsDiscuss.
- 21. Explain the factors influencing wage policies.
- 22. Discuss the causes of dissatisfaction and steps to improve job satisfaction.
- 23. Explain the process of grievance and redressal activities

M.B.A. (General) DEGREE EXAMINATION, APRIL - 2023

Second Semester

Management

PRODUCTION AND OPERATIONS MANAGEMENT

(CBCS - 2022 onwards)

Time: 3 Hours Maximum: 75 Marks

Part A $(10 \times 1 = 10)$

Answer all questions.

- 1. Henry Ford is noted for his contributions to
 - (a) Standardisation of parts
 - (b) Statistical quality control
 - (c) Assembly line operations
 - (d) Scientific management
- 2. may be defined as the ratio between output and input
 - (a) Production
 - (b) Productivity
 - (c) Batch production
 - (d) Job production

for t	Q	<i>a</i> >	т	
(a)	Capacity	(b)	Locations	
(c)	Layout	(d)	All of these	
		refers to	the maximum	m capacity of a
mad	thine with a part	ticular de	sign	
(a)	Effective capa	city		
(b)	Maximum cap	acity		
(c)	Design capacit	_{zy}		
(d)	Production cap	pacity		
		study	is concerne	d with the
dete	ermination of th	e amount	of time requ	ired to perform
	nit of work.		_	
		(b)	Motion	
a ur	nit of work.			
a ur(a)(c)	nit of work. Method	(b) (d)	Motion Work	art of
a ur(a)(c)	nit of work. Method Time	(b) (d)	Motion Work	art of
a ur (a) (c) Met	nit of work. Method Time hod study and w	(b) (d)	Motion Work	art of
a ur(a)(c)Met(a)	nit of work. Method Time hod study and w Work study	(b) (d)	Motion Work	art of
a ur(a)(c)Met(a)(b)	nit of work. Method Time hod study and w Work study Time study	(b) (d)	Motion Work	art of
a ur(a)(c)Met(a)(b)(c)(d)Prod	nit of work. Method Time hod study and w Work study Time study Motion study	(b) (d) work meas	Motion Work surement is pa	
a ur(a)(c)Met(a)(b)(c)(d)Prod	nit of work. Method Time hod study and w Work study Time study Motion study Productivity duct layout is	(b) (d) work meas	Motion Work surement is pa	art of type of
a ur (a) (c) Met (a) (b) (c) (d) Proc	Method Time hod study and w Work study Time study Motion study Productivity duct layout is	(b) (d) work meas	Motion Work surement is pa	

8.		following type of landard product in la	•	-	manufacture a	
	(a) Product layout					
	(b)	Process layout				
	(c)	Fixed position la	yout			
	(d)	Combination lay	out			
9.			_ helı	os in identifying	g inventory on	
	the	basis of their impo	rtance	e and urgency.		
	(a)	VED analysis	(b)	ABC analysis		
	(c)	EOQ model	(d)	FSN analysis		
10.	CPN	M is the				
	(a)	Time oriented te	chniqu	ıe		
	(b)	Event oriented to	echniq	ue		
	(c)	Target oriented technique				
	(d)	Activity oriented	techn	ique		
		Pa	art B		$(5 \times 5 = 25)$	
	A	nswer all question	ıs, cho	osing either (a)	or (b).	
11.	(a)	Highlight the so	cope o	of production a	nd operations	
			Or			
	(b)	Explain the need	for re	everse engineeri	ng.	
12.	(a)	What are capacit	y plar	nning strategies	?	
			Or			
	(b)	Briefly explain tl	ne loca	ational Break-E	ven Analysis.	
	(0)					

13. (a) Discuss the procedures involved in process planning.

Or

(b) Describe the steps involved in method study.
14. (a) Explain about layout design procedure.

Or

- (b) Write a note on Assembly line balancing.
- 15. (a) Define CPM. Name three steps in CPM processing.

Or

(b) Highlight the need for EOQ model.

Part C $(5 \times 8 = 40)$

Answer any **five** questions.

- 16. Explain the different types of manufacturing systems.
- 17. Discuss the objectives and importance of facility planning.
- 18. Analyze the importance of capacity planning.
- 19. Outline the characteristics of production process systems.
- 20. Briefly explain the layout types.
- 21. Discuss the various functions of layout.
- 22. Describe the importance of inventory control technique.
- 23. Discuss the use of ABC analysis of inventory control. Explain its significance in modern inventory control.

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M.B.A.(General) DEGREE EXAMINATION, APRIL – 2023

Second Semester

Management

FINANCIAL MANAGEMENT

(CBCS - 2022 onwards)

Time	e:3 I	Hours		Maximum : 75 Mark	s
		Part	A	$(10 \times 1 = 10)$))
		Answer al	1 գւ	uestions.	
1.		_is a person who is re	espo	onsible for finance functions.	
	(a)	Finance Manager (b)	Human Manager	
	(c)	Portfolio Manager (d)	Accounting Manager	
2.	Prof	fit Maximisation is c	one	cerned with maximization of	f
	(a)	NPV (b)	EPS	
	(c)	EBIT (e	d)	Profit	
3.	Tra	de credit is source of _			
	(a)	Long-term finance			
	(b)	Medium-term finan	ce		
	(c)	Short-term finance			
	(d)	Spontaneous finance	e		
4.	Trea	asury bills are			
	(a)	Bills of Exchange			
	(b)	Not Liquid			
	, ,	Promissory Note			
	(d)	High Liquid			

to th	debe		es are issued with an option
(a)	Convertible	(b)	Non-Convertible
(c)	Negotiable	(d)	Non-Negotiable
	nigh gear the capita	al str	ructure becomes loaded with
(a)	Fixed rate bonds	(b)	Bank overdraft
(c)	Retained earnings	(d)	Equity Shares
The	"Arbitrage Proces	s" in	M-M hypothesis refers to
(a)	An act of buying a	ssets	/ securities
(b)	An act of buying se it in higher price	ecuri	ties at lower price and selling
(c)	An act of selling se	ecurit	ies
(d)	An act of trading		
MM on	theory speaks of th	ne irr	elevance of dividend decision
(a)	Value	(b)	Risk
(c)	Return	(d)	Liquidity
The	most appropriate di	ivideı	nd policy is payment of
(a)	Low dividend	(b)	Variable per share
(c)	Constant dividend	(d)	No dividend
		2	R8082

10.	The	decision	rule	under	profitability	index	method	is

- (a) PI > 1 accept
- (b) PI < 1 reject
- (c) Both (a) and (b)
- (d) PI = 1accept

Part B

 $(5 \times 5 = 25)$

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

11. (a) Explain the relationship between financial management and other areas of management.

Or

- (b) Describe the various types of finance decisions.
- 12. (a) Explain various factors influencing working capital

Or

- (b) What is share and elaborately discuss with types of share?
- 13. (a) Describe the cost of capital and briefly discuss with classification of cost of capital.

Or

(b) A project is acceptable unless the yield is 10% Cash inflow of the project along with cash outflow are given below:

Year	Outflows	Inflows	PV Factor @
0	1,50,000		1.000
1	30,000	20,000	0.909
2		30,000	0.826
3		60,000	0.751
4		80,000	0.683
5		30,000	0.621

The salvage value at the end of the 5th year is Rs.40,000. Calculate the net present value.

3

14. (a) What are the essentials of Gardon's model of dividend effect?

Or

- (b) What is dividend? Different forms of dividend Discuss
- 15. (a) Contemporary development in the field of financial domain- Discuss

Or

(b) You can assume that the manager of one company, and how to measure the performance of companies and what are tools to help in the performance?

Part C $(5 \times 8 = 40)$

Answer any **five** questions.

16. From the following information, extracted from the books of a manufacturing company, compute the operating cycle in das by operating cycle methods and the amount of working capital required:

Period covered	$365 ext{ days}$	
Average period of credit allowed by suppliers	16 days	
	(Rs.in '000)	
Average Total of debtors outstanding	480	
Raw Material Consumption	4,400	
Total Production Cost	10,000	
Total Cost of Sales	10,500	
Sales for the year	16,000	
Value of Average Stock Maintained :		
Finishing Goods	260	
Raw Materials	320	
Work-in-Progress	350	
		_

4

- 17. What are the Internal factors which influence the dividend policy of a firm?
- 18. The project cost of an investment is Rs, 50,000. The facility has a life expectancy of 5 years and no salvage value. The company's tax rate is 55% The firm uses straight line depreciation. The estimated cash flows before depreciation and tax is a follows:

Year 1 2 3 4 5

CFBD 10,000 11,000 14,000 15,000 25,000 and TAX

Compute the following: (a) Payback period; (b) ARR;

- (c) IRR (d) Net present value at 10% discount rate; Profitability index at 10% discount rate.
- 19. Following are the details regarding three companies:

A Ltd	B Ltd	C Ltd
r=15%	r=15%	r=10%
Ke=10%	Ke=10%	Ke=10%
E=0.8	E=0.8	E=0.8

Calculate the value of equity share of each of the company applying Walter's model, when dividend payout ratio is: (a) 50% (b) 75% and (c) 25%

- 20. What is the dividend decision and analyzing the factors influencing the dividend decision?
- 21. A company's equity shares are being traded in the market at Rs.48 per share with a price earning ratio of 8. The company's dividend payout ratio is 80%. It has 1,00,000 equity shares of Rs. 10 each and no preference shares. Book value per share is Rs. 40. Calculate (i) Earnings per Share, (ii) Net income; (iii) Dividend yield and (iv) Return on equity.

- 22. Explain the debenture valuation models you would adopt for valuation of redeemable debentures and perpetual debentures.
- 23. Briefly discuss with diversification and modernization.

M.B.A. (General) DEGREE EXAMINATION, APRIL - 2023

Second Semester

Management

QUANTITATIVE METHODS

(CBCS - 2022 onwards)

Time: 3 Hours Maximum: 75 Marks

Part A $(10 \times 1 = 10)$

Answer all questions.

- 1. What is the objective function is linear programming problems?
 - (a) A constraint for available resource
 - (b) An objective for research and development of a company
 - (c) A Linear function in an optimization problem
 - (d) A ser of non-negativity conditions
- 2. Graphical optimal value for Z can be obtained from
 - (a) Corner points of feasible region
 - (b) Both (a) and (c)
 - (c) Corner points of the solution region
 - (d) None of the above

3.	(supp		ımns	ation problem with 'm'-rows (destination) is feasible if are
	(a)	m + n	(b)	$m \times n$
	(c)	m+n-1	(d)	m+n+1
4.	The calle		olvin	g an assignment problem is
	(a)	MODI method		
	(b)	Reduced Matrix m	ethod	l
	(c)	Hungarian method	d	
	(d)	None of the above		
5.	Whice mode		ing is	a part of every game theory
	(a)	Players	(b)	Payoffs
	(c)	Probabilities	(d)	Strategies
6.	Unde	er queuing model th	ne arr	riving people are called
	(a)	Customer	(b)	People
	(c)	Seller	(d)	All of these
7.		probability of getting is	ng tw	o tails when two coins are to
	(a)	$\frac{1}{6}$	(b)	$\frac{1}{2}$
	(c)	$\frac{1}{3}$	(d)	$\frac{1}{4}$
			2	R8083

In	binomial	distribution,	successive	trials	are
(a)	Mutually	exclusive			
(b)	Dependen	t			
(c)	Independe	ent			
(d)	None of th	e above			
Dec	ision theory	is concerned wi	th		
(a)	Methods o	f arriving at an	optimal decis	sion	
(b)	Selecting	optimal decision	in a sequent	ial Mann	er
(c)	Analysis o	of information th	nat is aviable		
(d)	All of thes	e			
_	ayoff table ons of	can also be cons	structed in ar	nother wa	y in
(a)	Opportuni	ity Loss table			
(b)	Opportuni	ty gain table			
(c)	Minimum	opportunity tak	ole		
(d)	Maximum	opportunity tal	ole		
		Part B		$(5 \times 5 =$	= 25)
A	answer all q	uestions, choosi	ng either (a) o	or (b).	
(a)	Elaborate	the application	s in Linear Pı	rogrammi	ng.
		Or			
		Or			
(b)	Solve the	following LPP b	y graphical m	ethod	
(b)				ethod	
(b)	Maximize	following LPP b		ethod	
(b)	Maximize Subject to	following LPP b $Z = 25x_1 + 20x_2$		ethod	
(b)	Maximize Subject to $16x_1 + 12x_1$	following LPP b $Z = 25x_1 + 20x_2$ $_2 \le 100,$		aethod	
(b)	Maximize Subject to	following LPP b $Z = 25x_1 + 20x_2$ $_2 \le 100,$		nethod	
(b)	Maximize Subject to $16x_1 + 12x$ $8x_1 + 16x_2$	following LPP b $Z = 25x_1 + 20x_2$ $_2 \le 100,$		nethod	

12. (a) Solve the transportation problem by using MODI method.

Or

(b) Solve the Assignment problem

$$\begin{array}{ccccc} & M_1 & M_2 & M_3 \\ J_1 & 19 & 28 & 31 \\ J_2 & 11 & 17 & 16 \\ J_3 & 12 & 15 & 13 \end{array}$$

13. (a) Solve the following game:

(b) Customer arrive at a box office window, being manned by a single Individual according to a Poisson input process with a mean rate of 30 per hour. The time required to serve a customer has an exponential distribution with a mean of 90 seconds. Find the average waiting time of a customer.

R8083

14.	(a)	State and prove the addition theorem of probabilit				
		Or				

- (b) In a bag there are 5 white, 7 black and 8 red balls Find the probability that the ball taken is
 - (i) a white ball
 - (ii) a black ball
 - (iii) a red ball
- 15. (a) The probability distribution of monthly sales of an item is as follows:

Monthly	0	1	2	3	4	5	6
sales (units)							
Probabilities	.01	.06	.25	.30	.22	.10	.06

The cost of carrying inventory (unsold during the month) is Rs. 30 per unit per month and the cost of unit shortage is Rs. 70. Determine optimum stock to minimize expected cost.

Or

(b) Explain the limitations of simulation.

Part C
$$(5 \times 8 = 40)$$

Answer any **five** questions.

16. Evaluate the following LPP by simplex method

Maximise $Z = 6x_1 + 4x_2$

Subject to

$$x_1 + 2x_2 \le 720$$

$$2x_1 + x_2 \le 780$$

$$x_1 + x_2 \le 320 \text{ and }$$

$$x_1, x_2 > 0$$

17. Solve the following transportation model Vogel's approximation method:

		,	Capacity		
		\mathbf{W}_1	W_2	\mathbf{W}_2	_
	\mathbf{P}_1	7	5	9	28
Plan	P_2	12	16	10	44
	P_3	8	7	6	43
	Demand	34	45	36	115

18. Solve the game applying principle of dominance theory

		Player B				
		1	2	3	4	5
Player A	1	2	5	10	7	2
	2	3	3	6	6	4
	3	4	4	8	12	1

- 19. Ten coins are tossed simultaneously. Find the probability of getting
 - (a) atleast seven heads
 - (b) exactly seven heads
 - (c) atmost seven heads
- 20. A T.V. dealer finds that the procurement cost of a T.V. is Rs. 20 and the cost of a unit shortage is Rs. 50. For one particular model of T.V. the probability distribution of weekly sales is as follows:

Weekly sales: 0 2 3 5 6 1 4 Probability: 0.1 0.1 0.20.20.20.150.05

How many units per week should the dealer buy?

21. Solve the following assignment problem which minimizes the total man hour

			Man		
		A	В	\mathbf{C}	D
	1	10	25	15	20
Job	2	15	30	5	15
	3	35	20	12	24
	4	17	25	24	20

- 22. Explain the concept of decision trees.
- 23. What are the steps involved in carrying out Monte Carlo simulation model?