

Reg. No.:



Name:

University of Kerala

U9361

Second Semester FYUGP Degree Examination, April 2025

Multi-Disciplinary course

MATHEMATICS

UK2MDCMAT101 - Business Mathematics

Academic Level: 100-199

Time: 1 Hour 30 Minutes(90 Mins.)

Max. Marks: 42

Part A. 6 Marks.Time:6 Minutes.(Cognitive Level:Remember(RE)/Understand(UN)) Objective Type. 1 Mark Each.Answer all questions

Qn No.	Question	CL	CO
1	What is time series?	RE	3
2	Define Depreciation.	RE	3
3	Define Index No	UN	1
4	Choose among the following Effective rate of interest is greater than----- a)force of interest b)simple interestc)Nominal rate of interest d)None	UN	3
5	Write the formula of compound interest?	UN	3
6	Write an example of Secular Trend.	UN	2

Part B.8 Marks.Time:24 Minutes.(Cognitive Level:Understand(UN)/Apply(AP))Short Answer. 2 marks each.Answer all questions

Qn No.	Question	CL	CO
7	What are irregular variation?	UN	1
8	Express the equation for simple aggregative method?	UN	2
9	Calculate the nominal rate of interest convertible half-yearly when the effective rate is 6%p. a.?	AP	3
10	A person deposited ₹4000 in a bank at 6%compounded continuously. After three years the rate of interest was increased to 7% and after 5 more years the rate was further increased to 8%.The money was withdrawn at the end of 10 years. Find the amount?	AP	3

Part C. 28 Marks.Time:60 Minutes (Cognitive Level:Apply(AP)/Analyse(AN)/Evaluate(EV)/Create(CR)) Long Answer.7 marks each.Answer all 4 Questions choosing among options * within each question

Qn No.	Question	CL	CO
11	A) Find the principal that yields a simple interest of Rs.40 or a compound interest of Rs.41 at the same rate of interest per annum in 2 years. OR B) Explain about different types of Index Number?	AP	3, 1
12	A) Explain Present value ,Effective rate of interest and force of interest OR B) Under a marriage endowment policy for Rs.20,000, the sum assured is payable at the end of the fixed term chosen. A claim for a policy of Rs.20,000 has occurred 12 years before the end of the fixed term and the claimant requests for immediate payment. Presuming that insurer entertains such request, what is the sum payable if interest is reckoned at a. 6% p.a. b. 7% p.a.	AN	3, 3

Qn No.	Question	CL	CO																						
13	A) An enquiry into the budget of middle class families of a certain city revealed that on an average the percentage expenses on the different groups were: Food-45, Rent-15, Clothing-12, fuel and Light-8, Miscellaneous-20. The group index numbers for the current year has compared with a fixed base period were respectively 410,150,343,248 and 285. Calculate the cost-of-living index number for the current year. OR B) Mr. Ram borrowed Rs. 25,000 from a moneylender but he could not repay any amount in a period of 5 years. Accordingly the moneylender demands now Rs. 35,880 from him. At what rate percent per annum compound interest did the latter lend his money?	EV	1, 3																						
14	A) Explain the analysis of time series. OR B) Fit a trend line to the following data by the freehand curve method : <table><tr><td>Year</td><td>1971</td><td>1972</td><td>1973</td><td>1974</td><td>1975</td><td>1976</td><td>1977</td><td>1978</td><td>1979</td><td>1980</td></tr><tr><td>Production</td><td>150</td><td>155</td><td>165</td><td>152</td><td>174</td><td>150</td><td>174</td><td>175</td><td>160</td><td>180</td></tr></table>	Year	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	Production	150	155	165	152	174	150	174	175	160	180	CR	4, 4
Year	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980															
Production	150	155	165	152	174	150	174	175	160	180															