MCA–411	**MCA–01/ PGDCA–01**

M.C.A. DEGREE/P.G.D.C.A. EXAMINATION – JUNE 2009.

First Semester/First Year

COMPUTER FUNDAMENTALS

Time : 3 hours Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

1. Convert the following :

   (a) $(167)_8 = (\ ?\ )_{10}$

   (b) $(19)_{10} = (\ ?\ )_2$

2. Write a note on Gray code.

3. Explain about RS-flip flop.

4. Discuss briefly about shift register.

5. Describe the operations of decoders.

6. Define Linker with examples.

7. What is meant by vector processing? Explain briefly.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

8. Perform the following operations :

   (a) $(1110)_2 \times (0111)_2$

   (b) $(120)_8 \times (50)_8$.

9. Draw the truth table for a 4 input OR gate.

10. Explain RAM and its types.

11. Describe the various Flip-flops with truth-tables.

12. Discuss on peripherals and interfaces.

13. Explain the types of registers with example.

14. Explain about Error detecting and Error correcting codes.

MCA–412 **MCA–02**

M.C.A. DEGREE EXAMINATION –
JUNE 2009.

First Semester/First Year

INTRODUCTION TO SOFTWARE

Time : 3 hours Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

15. What is meant by an imperative statement?

16. What are non terminal symbol? Explain.

17. Discuss the functions performed by a compiler.

18. Write short notes on device management.

19. What is meant by UNIX kernel? Is it a multitasking OS? Explain briefly.

20. Draw the UNIX architecture and explain briefly.

21. State the principles of software engineering briefly.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

22. Write an algorithm to find the factorial of a given number using recursion.

23. Write short notes on pass structure of a macro assembler.

24. Explain the functions of memory management scheme.

25. Discuss the features of UNIX operating system.

26. What is meant by Text manipulation? Explain briefly.

27. Discuss in detail the software development life cycle.

28. Illustrate briefly the qualities of software with an example.

MCA–413	MCA03/ PGDCA–02

M.C.A. DEGREE/P.G.D.C.A. EXAMINATION – JUNE 2009.

First Semester / First Year

DATA STRUCTURES THROUGH C

Time : 3 hours Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

29. What is meant by Library functions? Bring out its importance.

30. What is meant by a reserved words? Why are they used? Explain briefly.

31. Write the syntax of switch ( ) statement.

32. Write a program to print the following design :

```
*
*  *
*  *  *
*  *  *  *
*  *  *  *  *
```

33. What is meant by an ordered list? Explain briefly.

34. Explain linear search with an example.

35. Define a B-Tree. Give an example.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

36. Write a program to find the roots of a quadratic equation of the form $ax^2 + bx + c = 0$ using functions.

37. What is meant by 'formal parameters'? Explain with an example.

38. What is meant by Garbage collection and compaction? Illustrate with an example.

39. Write a procedure to evaluate a postfix expression using stack.

40. Declare a structure with the fields Roll No., name, mark1, mark2. Input and output this structure data using pointer to a structure. How to solve without pointer variable?

41. Explain the procedure to add an element in the queue with the implementation.

42. Write an algorithm of Quick Sort to arrange the art of given numbers.

MCA–414	**MCA–04/ PGDCA–03**

M.C.A. DEGREE/P.G.D.C.A. EXAMINATION – JUNE 2009.

First Semester/First Year

ELEMENTS OF SYSTEMS ANALYSIS AND DESIGN

Time : 3 hours Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

43. Write about any three important characteristics of open systems.

44. Write a note on 'Planning of systems project'.

45. Describe the characteristics of candidate system.

46. Explain the conceptual data modeling.

47. Explain briefly the procedure used to construct Questionnaire.

48. Explain briefly about the activities involved in system conversion.

49. Describe 'Software Maintenance'.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

50. Discuss the system development Life cycle with a neat diagram.

51. Explain the behavioural issues that contribute to system success.

52. Explain about process requirements in detail.

53. Briefly discuss E-R model with example.

54. Illustrate the use of decision tables in the representation of logic.

55. Explain structured design with a neat diagram.

56. Write short notes on the organizational impact of MIS.

MCA–415	**MCA–05/ PGDCA–04**

M.C.A. DEGREE/P.G.D.C.A. EXAMINATION – JUNE 2009.

First Semester/First Year

INTRODUCTION TO DBMS

Time : 3 hours Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

57. Discuss about Data Dictionary.

58. Discuss in detail – Generalisation and specification.

59. Write about response system and RESPNET choices.

60. Explain Join and Selection operation with an example.

61. Discuss about decomposition with an example.

62. Write the advantages of object oriented databases.

63. Write about the features of DDL.

PART B — (5 × 10 = 50 marks)

Asnwer any FIVE questions.

64. Explain about Relational Model.

65. Explain the indexing techniques.

66. Explain BCNF, 4 NF and 5 NF with examples.

67. Explain about Data Manipulation features of SQL.

68. Discuss in detail about the features of Distributed Databases.

69. Discuss about client / server Databases.

70. Write in detail about knowledge representation schemes.

MCA–417	MCA–07/ PGDCA–06

M.C.A. DEGREE/P.G.D.C.A. EXAMINATION – JUNE 2009.

Second Semester/First Year

INTRODUCTION TO SOFTWARE ENGINEERING

Time : 3 hours Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

71. Discuss briefly Life cycle phases.

72. Explain coding and module testing in software life cycle.

73. List out the 5 players to populate the s/w process.

74. What are the attributes of an effective systems analyst?

75. What are the points to be noted when problem identification and definition?

76. Discuss about Software Quality Assurance.

77. How will you identify the increasing cost of error correction?

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

78. Explain problem identification.

79. Explain project planning and control.

80. Explain the following risk management concepts :
    (a) Technical risks
    (b) Project risks.

81. Discuss the methods used to form software teams.

82. Explain cohesion and coupling in detail.

83. Explain software crisis with examples.

84. Discuss about CASE Tools.

MCA-418 **MCA–08**

M.C.A. DEGREE EXAMINATION –
JUNE 2009.

Second Semester/First Year

COMPUTER ORIENTED NUMERICAL METHODS

Time : 3 hours Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

85. Describe the different forms that the numbers in the computer word can be stored.

86. Use the secant method to determine the root of the equation $\cos x - xe^x = 0$.

87. Describe the Gauss-Jordan method.

88. Compare direct and iterative methods of simultaneous equations.

89. The population of a town is as follows :

Year	1941	1951	1961	1971	1981	1991
Population (in lakhs) :	20	24	29	36	46	51

Estimate the population during the period 1976.

90. Compute the truncation error in Trapezoidal rule.

91. Given $y' = -y$ and $y(0) = 1$, determine the value of y at $x = 0.01$ and 0.02 by Euler method.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

92. Find the positive root of $x^3 - x = 1$ correct to 4 decimal places by bisection method.

93. Find an iterative formula to find the reciprocal of a given number N and hence find the value of $\frac{1}{19}$.

94. Apply Gauss-Elimination method to solve $3x + 4y + 5z = 18;\ 2x - y + 8z = 13,\ 5x - 2y + 7z = 20$.

95. Solve by Gauss-Seidel method, the following system :

$$28x + 4y - z = 52,\ x + 3y + 10z = 24;\ 2x + 17y + 4z = 35$$

96. The population of a town in the census was given below. Estimate the population for the year 1895 and 1925 :

Year :	1891	1901	1911	1921	1931
Population (in thousands)	46	66	81	93	101

97. By dividing the range into ten equal parts, evaluate $\int_0^{®} \sin x\, dx$ by Trapezoidal rule and Simpson's 1/3 rule.

98. Using Taylor series method, find y at $x = .1\ (.1).4$ given $\frac{dy}{dx} = x^2 - y;\ y(0) = 1$.

MCA–419 **MCA–09/ PGDCA–07**

M.C.A. DEGREE/P.G.D.C.A. EXAMINATION – JUNE 2009.

Second Semester/First Year

C++ AND OBJECT ORIENTED PROGRAMMING

Time : 3 hours Maximum marks : 60/75

PART A — (4 × 5 = 20/5 × 5 = 25 marks)

Candidates with enrolment number starting with A5BCA and C5BCA should answer any FOUR from the questions 1 to 6 and all others should answer any FIVE from the questions 1 to 7 in Part A.

99. What are the Applications of Object Oriented Programming?

100. What are the characteristics of Arrays?

101. Explain Overloading Binary Operator using Friend Function with an example.

102. Discuss "if " statements.

103. Explain Class Templates with an example.

104. Explain Pass by Reference with an example.

105. Discuss the Benefits of Modeling in UML.

PART B — (4 × 10 = 40/5 × 10 = 50 marks)

Candidates with enrolment number starting with A4MCA and C5MCA should answer any FOUR from the questions 8 to 13 and all others should answer any FIVE from the questions 8 to 14 in Part B.

106. Explain how will you declare and initialize a Class and explain with example.

107. Create a program for EB-Bill preparation using Static Member Functions.

108. Explain different types of Operators with example.

109. Explain in detail about Multiple Catch Statements with an example.

110. Create a function template program for sorting list of elements using Bubble sort method.

111. Describe Virtual Base Class with an example.

112. Explain any 5 UML class diagrams.

MCA–420 **MCA– 10/ PGDCA–08**

M.C.A. DEGREE/P.G.D.C.A. EXAMINATION – JUNE 2009.

Second Semester / First Year

THEORY OF COMPUTER SCIENCE

Time : 3 hours Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

113. Prove that $R(S+T) = RS + RT$.

114. Show that the language $L = \{0^m 1^m ; m > 0\}$ is not regular.

115. Write short note on non-context free language.

116. Explain briefly universal turing machine.

117. Show that plus-prod is primitive recursive.

118. Show that $n^2 + 3\log n = O(n^2)$.

119. $f(x) = x^2 + 3x + 1,\ g(x) = 2x - 3$ find
$f \circ g,\ g \circ f,\ f \circ f,\ g \circ g$.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

120. If the string $\sim = abab$ accepted by the finite state automata? Justify.

121. Construct NDFA for the regular expression $r = (a/b)^* ab$ and convert it into DFA.

122. Construct the grammar for the language
$L(G) = \{a^n b a^n / n \geq 1\}$.

123. Design Turing machine to accept the language $L = \{b^n d^n / n \geq 1\}$.

124. Explain various types of problems.

125. Discuss about pushdown automata.

126. Discuss about the application of context free grammar.

MCA–421 **MCA–11**

M.C.A. DEGREE EXAMINATION –
JUNE 2009.

Third Semester/Second Year

COMPUTER GRAPHICS

Time : 3 hours Maximum marks : 75

SECTION A — (5 × 5 = 25 marks)

Answer any FIVE questions.

127. Explain colour CRT monitor's applications briefly.

128. Explain hard copy devices.

129. Express the translation $x' = x + t_x$ and $y' = y + t_y$ as a single matrix equation.

130. What is meant by shear? Explain.

131. Explain a refresh display file.

132. Explain any two input devices.

133. What is meant by pixel phasing? Explain briefly.

SECTION B — (5 × 10 = 50 marks)

Answer any FIVE questions.

134. Explain the working principle of shadow mask CRT.

135. Explain Line-drawing algorithm in detail with its underlying concepts.

136. Explain view transformation and windowing transformation in detail.

137. Explain clipping operations with their primitive types.

138. What is meant by reflection? How is it different from basic transformations?

139. What is meant by perspective projection? Explain briefly.

140. Explain the depth-sorting method in detail.

MCA–422 **MCA–12**

M.C.A. DEGREE EXAMINATION –
JUNE 2009.

Third Semester/Second Year

DESIGN AND ANALYSIS OF ALGORITHMS

Time : 3 hours Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

141. What is meant by performance profile? Explain briefly.

142. What is meant by testing? Give an example.

143. Explain the term 'a priori estimate'.

144. What is a magic square? Explain briefly.

145. What is meant by backtracking? Explain briefly.

146. What is a dynamic tree table? Illustrate with an example.

147. Explain the use of Hashing function briefly.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

148. Explain the methods used to analyse an algorithm.

149. Explain how inefficiency due to late termination can be avoided with an example.

150. What is meant by ordered list? Explain the algorithm used to create it.

151. Explain the representation of arrays with a neat diagram.

152. Explain K-way merge sort with an example.

153. Illustrate the applications of a tree with an example.

154. Explain sorting with tapes briefly.

MCA-423 **MCA–13**

M.C.A. DEGREE EXAMINATION –
JUNE, 2009.

Third Semester / Second Year

ACCOUNTING AND FINANCE ON COMPUTERS

Time : 3 hours Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

155. State four functions of Accounting.

156. How cash flow statement differs from funds flow statement?

157. Write short notes on :

(a) Fixed cost

(b) Contribution.

158. What is meant by working capital? Explain the dangerous of Excess working capital.

159. Prepare Trading Account of Arun for the year ending 31.12.2006 from the following information.

	Rs.
Opening stock	40,000
Purchases	4,30,000
Freight inward	26,000
Wages	12,000
Sales	7,20,000
Purchase returns	5,000
Sales returns	1,58,000
Closing stock	50,000
Import duty	15,000

160. Sales Rs. 1,00,000

Profit Rs. 10,000

Variable cost 70%

Find out (a) P/V ratio (b) Fixed cost (c) Sales volume to earn a profit of Rs. 40,000.

161. Prepare an estimate of working capital requirements from the following information :

(a)	Perfect annual sales	1,00,000 units
(b)	Selling price	Rs. 8 per unit
(c)	% of net profit on sales	25%
(d)	Average credit period allowed to customer	8 weeks
(e)	Average credit period allowed by suppliers	4 weeks
(f)	Average stock holding in terms of sales required	12 weeks
(g)	Allow 10% for contingencies.	

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

162. Define different types of accounting. What are the advantages of it?

163. Define budgetary control and state its advantages.

164. From the following Trial Balance, prepare Trading, Profit and Loss account for the year ended 31.1.2005 and Balance Sheet as on that date.

	Rs.		Rs.
Purchases	11,870	Capital	8,000
Debtors	7,580	Bad debts recovered	250
Returns inward	450	Creditors	1,250
Bank Deposit	2,750	Returns outwards	350
Rent	360	Bank overdraft	1,570
Salaries	850	Sales	14,690
Travelling expenses	300	Bills payable	1,350
Cash	210		
Stock	2,450		
Discount allowed	40		
Drawings	600		
	27,460		27,460

Adjustments :

(a) Closing stock on 31.12.2005 was Rs. 4,200.

(b) Write off Rs. 80 as bad debts and create a reserve for bad debts at 5% on sundry debtors.

(c) Three months rent is outstanding.

165. You are given the following data for the year 2004 of the company.

Variable cost	Rs. 6,00,000
Fixed cost	Rs. 3,00,000
Net profit	Rs. 1,00,000
Sales	Rs. 10,00,000

Find (a) P/V Ratio (b) Break-even point (c) Profit when sales amounted to Rs. 12,00,000 (d) Sales required to earn a profit of Rs. 2,00,000.

166. The expenses budget for production of 10,000 units in a factory are given below :

	Rs. per unit
Materials	70
Labour	25
Variable overheads	20
Fixed overheads (1,00,000)	10
Variable overheads (Direct)	5
Selling expenses (10% fixed)	13
Administration expenses (Rs. 50,000)	5
Distribution expenses (20% fixed)	7
	155

Prepare a budget of production (a) 8,000 units (b) 6,000 units. Assume that the administration expenses are rigid for all levels of production.

167. Debtor velocity : 3 months

Creditor velocity : 2 months

Stock velocity : 8 times

Fixed assets turnover ratio : 8 times

Gross profit turnover ratio : 25%

Gross profit in a year amounted to Rs. 80,000. Closing stock is 2,000 than the opening stock. Bills receivable and bills payable are Rs. 5,000 and Rs. 2,000 respectively. Find out

(a) Sales (b) Sundry debtors (c) Closing stock (d) Sundry creditors (e) Fixed assets.

168. The following are the summarised Balance Sheet of Pravin Ltd. as at 31.12.2001.

Liabilities	2000	2001	Assets	2000	2001
Share Capital	2,00,000	2,50,000	Land & Bldgs.	2,00,000	1,90,000
General Reserve	50,000	60,000	Plant	1,50,000	1,74,000
P/L A/c	30,500	30,600	Stock	1,00,000	74,000
Bank loan	70,000	—	Debtors	80,000	64,200
Creditors	1,50,000	1,35,200	Cash	500	600
Provision for tax	30,000	35,000	Bank	—	8,000
	5,30,500	5,10,800		5,30,500	5,10,800

(a) Depreciation written off on plant Rs. 14,000.

(b) Dividend of Rs. 20,000 was paid during the year 2001.

(c) An income tax for provision made during the year was Rs. 25,000.

(d) A piece of land has been sold during the year at cost.

Prepare Fund Flow Statement.

MCA–424 **MCA–14**

M.C.A. DEGREE EXAMINATION – JUNE 2009.

Third Semester / Second Year

COMMUNICATION SKILLS

Time : 3 hours Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

169. Describe the communication process.

170. Explain critical reading in your own words.

171. What are the causes of poor listening?

172. Write a note on nature of body language.

173. What do you know about brain storming?

174. What are the nonverbal communication cues?

175. What are the advantages of group discussion?

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

176. 'Interpersonal communication does not happen in isolation' – elucidate this statement.

177. Point out some strategies to improve your listening skill.

178. What are the attributes of a good conversationalist?

179. What are different types of interviews?

180. Expedite the process of brainstorming technique.

181. Briefly elaborate the negotiation techniques.

182. Give some examples of nonverbal behavior and its body language interpretation.

MCA–425 **MCA–15**

M.C.A. DEGREE EXAMINATION –
JUNE 2009.

Third Semester / Second Year

COMPUTER NETWORKS

Time : 3 hours Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

183. Define computer network and explain its usage.

184. Compare OSI and TCP/IP reference models.

185. Define switching and explain switching techniques.

186. Short notes about coaxial cable.

187. Write notes on Error control.

188. Discuss about Carrier Sense Multiple Access Protocols.

189. Discuss about Distance Vector Routing.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

190. Describe the function of different layers in the OSI reference model.

191. Explain about communication satellites.

192. Explain about data link layer design issues.

193. Explain the MAC layer for medium access.

194. Explain multicast routing and link state routing algorithms.

195. Discuss about transport service primitives.

196. With a neat diagram discuss the DNS.

MCA-426 **MCA–16**

M.C.A. DEGREE EXAMINATION –
JUNE 2009.

Fourth Semester / Second Year

OPERATIONS RESEARCH

Time : 3 hours Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

197. Classify the OR models of structure.

198. Use graphical method to solve :

Maximize $z = 2x_1 + x_2$

subject to the constraints :

$$\begin{aligned} x_1 + 2x_2 &\le 10 \\ x_1 + x_2 &\le 6 \\ x_1 - x_2 &\le 2 \\ x_1 - 2x_2 &\le 1 \\ x_1,\ x_2 &\ge 0. \end{aligned}$$

199. Write the mathematical formulation of Assignment Problem.

200. Define (a) All IPP (b) Mixed IPP.

201. Describe the characteristics of queueing system.

202. Write the advantages of simulation.

203. Obtain the necessary conditions for the NLPP :

Maximize $z = x_1^2 + 3x_2^2 + 5x_3^2$

subject to the constraints :

$$\begin{aligned} x_1 + x_2 + 3x_3 &= 2 \\ 5x_1 + 2x_2 + x_3 &= 5 \\ x_1,\ x_2,\ x_3 &\ge 0. \end{aligned}$$

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

204. Use Simplex method to

Maximize $z = 3x_1 + 5x_2$

subject to the constraints :

$$3x_1 + 2x_2 \le 18$$
$$x_1 \le 4$$
$$x_2 \le 6$$
$$x_1,\ x_2 \ge 0.$$

205. Obtain an optimum basic feasible solution to the following Transportation Problem :

Warehouse

		W_1	W_2	W_3	W_4		
	F_1	19	30	50	10	7	
Factory	F_2	70	30	40	60	9	Capacity
	F_3	40	8	70	20	18	
		5	8	7	14		

Requirements

206. Find the Optimum integer solution to the LPP using Gomory's constraint :

Maximize $z = 2x_1 + 2x_2$

Subject to the constraints :

$$5x_1 + 3x_2 \le 8$$
$$x_1 + 2x_2 \le 4$$
$$x_1,\ x_2 \ge 0 \text{ and are integers.}$$

207. Use the Khun-Tucker conditions to solve the following NLPP :

Maximize $z = 2x_1^2 + 2x_1\, x_2 - 7x_2^2$

subject to the constraints :

$$2x_1 + 5x_2 \le 98$$
$$x_1,\ x_2 \ge 0.$$

208. Consider the EOQ system :

Annual consumption is 12000 units at the cost of Rs. 7.50 per unit. Set-up cost is Rs. 6 and the average inventory holding cost is Rs. 0.90 per unit. Normal lead time is 15 days and maximum lead time is 20 days. Calculate the following :

(a) Optimal order quantity

(b) Time between order

(c) Buffer stock

(d) ROL.

209. Given an arrival rate of 20 per hour, is it better for a customer to get service at a single channel with mean service rate of 22 customers or at one of two channels in parallel, with mean service rate of 11 customers for each of the two channels? Assume both the queues are M/M/S type.

210. A and B play game in which each has three coins, a 5 paise, a 10 paise and a 20 paise. Each selects a coin without the knowledge of the other's choice. If the sum of the coins is an odd amount, A wins B's coin, if the sum is even, B wins A's coin. Find the best strategy for each player and the value of the game.

MCA–427 **MCA–17**

M.C.A. DEGREE EXAMINATION – JUNE 2009.

Fourth Semester / Second Year

OPERATING SYSTEMS

Time : 3 hours Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

211. Define an operating system.

212. What is an Interrupt? Explain.

213. What is meant by PCB? Explain briefly.

214. What are the states of a process?

215. State the conditions to deadlock happening.

216. List out the requirements of memory management scheme.

217. List the operations of files.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

218. Explain the evolution of operating system in detail.

219. What is meant by spooling? Explain with diagram.

220. Explain shortest remaining time first-CPU scheduling in detail.

221. Explain logical and physical address space with respect to memory management scheme.

222. Write in detail about fixed and equal multiple partition memory management scheme.

223. What is a buffer? Explain various types of it in detail.

224. Explain file accessing methods in detail.

MCA–428 **MCA–18**

M.C.A. DEGREE EXAMINATION – JUNE 2009.

Fourth Semester / Second Year

OBJECT ORIENTED ANALYSIS AND DESIGN

Time : 3 hours Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

225. What is Object Oriented Development and explain the object oriented methodologies.

226. Discuss about Aggregation in detail.

227. Specify the relation of functional to object and dynamic models.

228. Write the steps for iterating the analysis.

229. Draw the neat diagram for Architecture of ATM system and explain.

230. Write short notes on robustness.

231. Explain how implementation work is carried out in Computer Animation.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

232. With some real time examples, describe how relationship among objects are implemented.

233. Explain in detail about advanced dynamic modeling concepts with its relevant example.

234. Describe about functional modeling.

235. Explain about the steps required for software control implementation.

236. Describe in detail about design optimization for object designing phase.

237. Explain the analysis phase of the object diagram compiler.

238. Explain how the object design and system design work is carried out for Electrical Distribution Design system.

MCA–429 **MCA–19**

M.C.A. DEGREE EXAMINATION – JUNE 2009.

Fourth Semester / Second Year

INTERNET PROGRAMMING

Time : 3 hours Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

239. Write a note on history of Internet.

240. Write a note on character formatted tags.

241. What do you mean by Dynamic Website?

242. Write a note on order List.

243. Java is a platform independent - Justify.

244. Explain Java Booleans with examples.

245. Define Class. Explain its general form.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

246. Discuss about HTML tags in detail.

247. Explain in detail about table tags.

248. Discuss about frameset tag in HTML.

249. Explain about the multimedia tags in HTML.

250. Explain the importance and methods to implement interface in Java.

251. Explain Java bit wise operators with example.

252. Design a website for a college using HTML tags.

MCA-430 **MCA–20**

M.C.A. DEGREE EXAMINATION – JUNE 2009.

Fourth Semester / Second Year

VISUAL PROGRAMMING

Time : 3 hours Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

253. Explain different level of programming.

254. Explain Single and Multi Document Interface.

255. Write a short note on SDK tools.

256. Explain about IDE.

257. Discuss about creating menu using menu editor.

258. Detail about VC++ components.

259. Explain the different types of VB controls.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

260. Explain Object-Oriented Programming and its characteristics.

261. How to create a procedure and function in Visual Basic and explain with example?

262. Create a DAO and ADO in Visual Basic and write a code segment to Move next, pervious, add records, edit records and Open records.

263. Explain file concepts in VC++.

264. What is exception handling and explain?

265. Discuss about ODBC connectivity for database.

266. Explain Dynamic Link Library files.

MCA–431 **MCA–21**

M.C.A. DEGREE EXAMINATION – JUNE 2009.

Fifth Semester / Third Year

RELATIONAL DATABASE MANAGEMENT SYSTEMS

Time : 3 hours Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

267. With a neat sketch discuss the three-schema architecture of a DBMS.

268. Explain the distinctions among the terms primary key, candidate key and super key. Give a relevant example.

269. Discuss the use of the following in Data Definition Language :

(a) ON DELETE CASCADE

(b) ON DELETE SET NULL

270. Develop DDL in ORACLE 8 i / 9 i to cerate a relation EMPLOYEE with attributes PANNO whose data type is VARCHARD2(10), ENO with data type VARCHAR2(5), NAME with data type VARCHAR2(45), DOB with data type DATE, SEX with data type CHAR, DOJ with data type DATE, DESIGNATION with data type VARCHAR2(4), BASIC with data type NUMBER (8, 2), DNO with data type VARCHAR2(5), [PRIMARY KEY ENO].

271. With relevant examples discuss the use of the following in SQL :

(a) IS NULL

(b) IS NOT NULL.

272. What is an Index? Give the syntax for creating an UNIQUE INDEX in Oracle 8 i / 9 i. Also give a relevant example.

273. What is Embedded SQL? Discuss the same with an example.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

274. Develop a Relational Model for a car-insurance company whose customers own one or more cars each. Each car has associated with it zero to any number of recorded accidents. Assume appropriate attributes and state any assumptions you make.

275. List out and discuss the purpose of Network System Tables in Oracle 8 i / 9 i.

276. With relevant examples discuss the use of the following in SQL :

(a) GROUP BY (4)

(b) HAVING (3)

(c) ORDER BY (3)

277. Consider the following six relations for an order-processing database application in a company :

CUSTOMER (<u>Cust#, Cname, City</u>)

ORDER (<u>Order#</u>, Odate, Cust#, Ord_Amt)

ORDER_ITEM (<u>Order#</u>, Item#, Qty)

ITEM (Item#, Item_Name, Unit_Price)

SHIPMENT (Order#, Warehouse#, Ship_Date)

WAREHOUSE (Warehouse#, City)

Here, Ord_Ant refers to total amount of an order, Odate is the date the order was placed; Ship_date is the date an order is shipped from the warehouse. Assume that an order can be shipped from several warehouses. Develop DDL in Oracle 8 i / 9 i for the above schema, enforcing necessary integrity constraints.

278. Consider the following relation :

EMP (**Eno**., Name, Date_Of_Birth, Sex, Date_Of_Joining, Basic_Pay, Dept.)

Develop SQL queries to perform the following :

(a) List the details of all employees who earn more than 10000 as basic pay. (2)

(b) List the details of all employees alphabetically. (2)

(c) List the details of employees who earn basic pay more than the average basic pay of all employees. (3)

(d) Display the average Basic_Pay in each department. (3)

279. Consider the following relation :

Employee (**Eno.** Name, Sex, Date_born, Date_jointed, Designation, Basic, Dept_No.)

Department (**Dept No**, Name, Noe)

Develop the following triggers in Oracle 8 i / 9 i.

(a) Develop a database trigger which will increment for NOE attribute in DEPARTMENT relation by 1 when a new record is inserted in the employee relation. (This situation occurs when a new employee is appointed) (5)

(b) Develop a database trigger which will decrement the NOE attribute in DEPARTMENT relation when a tuple in the employee relation is deleted. (This situation occurs when an employee working in a department quits his / her job) (5)

280. Discuss the languages supported by Oracle Pre-compiler.

MCA-432 **MCA–22**

M.C.A. DEGREE EXAMINATION –
JUNE 2009.

Fifth Semester / Third Year

CLIENT SERVER TECHNOLOGY

Time : 3 hours Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

281. What is Scalability? Discuss.

282. Discuss the advantages of Client/Server computing.

283. How do clients and servers communicate? Discuss.

284. What is platform migration? Discuss.

285. What is Remote Method Invocation? Discuss.

286. What are distributed objects? Discuss.

287. What is Object Linking and Embedding? Discuss the same with a relevant example.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

288. List and discuss the software packages that run on a client machine.

289. List and discuss the different categories of servers that promote sharing of data in a client server environment.

290. Discuss the features of Banyan Vines.

291. The client server model implies that there will be multiple concurrent user access. The database engine must be able to manage this access to maintain the integrity and consistency of the data base. List and maintain the features of the database engine that will ensure integrity and consistency of the data base.

292. Present a tutorial on Novel Netware Operating System.

293. Diagrammatically illustrate and discuss the architecture of Distributed Component Object Model (DCOM).

294. List and discuss the features of Power Builder.

MCA-433 **MCA–23**

M.C.A. DEGREE EXAMINATION – JUNE 2009.

Fifth Semester / Third Year

MULTIMEDIA SYSTEMS

Time : 3 hours Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

295. List and discuss the various elements of multimedia.

296. What is Cross Platform Compatibility? Discuss.

297. Distinguish between Analog and Digital Audio.

298. What is Compression? List and discuss the different types of Compression.

299. What are Media Classes? Discuss.

300. List and discuss the different Image File Formats.

301. Discuss the role of Multimedia in Education.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

302. List and discuss the hardware and software platforms required to set up a multimedia workstation.

303. Diagrammatically illustrate and discuss the architecture of a multimedia presentation system.

304. List and discuss the steps involved in development a Multimedia Project.

305. Discuss the procedure involved in Digital Music Production Process.

306. Diagrammatically illustrate and discuss MPEG image compression standard.

307. Present a Tutorial on “Object Oriented Multimedia Framework”.

308. Present a Tutorial on “Multimedia Networks”.

MCA-434 **MCA–24**

M.C.A. DEGREE EXAMINATION – JUNE 2009.

Fifth Semester / Third Year

DISTRIBUTED COMPUTING

Time : 3 hours Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

309. Compare tightly coupled and loosely coupled systems in terms of delay and data rates.

310. What is the difference between computation migration and process migration? Discuss.

311. What is inter-process communication? Discuss the need for the same.

312. Why is deadlock detection much more expensive in a distributed environment than it is in a centralized environment? Discuss.

313. What are the benefits of a DFS when compared to a file system in a centralized system? Discuss.

314. When is it useful to have replication or fragmentation of data? Explain your answer.

315. List the techniques and discuss any one technique through which fault tolerance can be achieved in distributed systems.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

316. List and discuss the different kinds of transparency in distributed systems.

317. List and discuss the four design issues for the communication primitives and some of the principal choices available for implementing the client server model.

318. Diagrammatically illustrate and discuss the ten steps in a Remote Procedure Call.

319. List and discuss the various design issues for threaded packages.

320. What is a Transaction? List and discuss the properties that must be satisfied by a Transaction. Give relevant example.

321. Diagrammatically illustrate and discuss the Distributed DBMS Architecture.

322. With relevant examples discuss transaction management in a distributed database management environment.

MCA–435 **MCA–25**

M.C.A. DEGREE EXAMINATION – JUNE 2009.

Fifth Semester / Third Year

NETWORK PROGRAMMING

Time : 3 hours Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

323. What is meant by ActiveX Scripting? Give example for ActiveX scripting host.

324. Mention the differences between ActiveX and Java.

325. What are the types of Automation servers?

326. What are the basic services of Hyperlinking?

327. Write steps to create an ActiveX document in VCC++.

328. Mention the differences between IIS applications and ASP applications.

329. How does ActiveX/COM impact computer-based measurement and automation?

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

330. Explain Host-Specific Interfaces in detail.

331. Write properties and methods of Binding Collection object.

332. Explain ActiveX document view Architecture in detail.

333. Discuss various functions of Hyperlinking.

334. What are the advantages and disadvantages of ASP pages?

335. Write steps to convert the project tracking system to an ActiveX documents.

336. Explain the structure of DHTML applications and write its applications.
