



**GIET UNIVERSITY, GUNUPUR – 765022**  
 B. Tech (Third Semester - Regular) Examinations, December – 2022  
**21BCSPC23001 / 21BCMPC23001/ 21BCDPC23001 –**  
**Database Management System**  
 [CSE,CSE(AIML) and CSE(DS)]

Time: 3 hrs

Maximum: 70 Marks

**Answer ALL questions**  
 (The figures in the right hand margin indicate marks)

**PART – A**

**(2 x 5 = 10 Marks)**

Q.1. Answer *ALL* questions

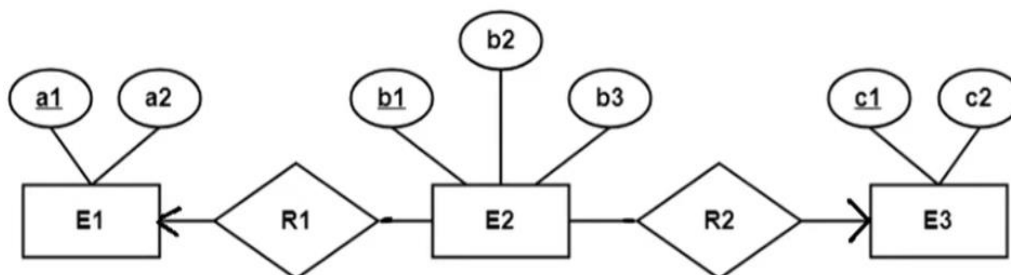
	CO #	Blooms Level
a. Differentiate between file system and DBMS.	CO1	1
b. Define determinant and dependent in functional dependency.	CO2	2
c. Define mapping in DBMS.	CO1	1
d. Explain dense indexing in DBMS.	CO3	1
e. Explain Hash file organization.	CO4	1

**PART – B**

**(15 x 4 = 60 Marks)**

Answer ALL the questions

	Marks	CO #	Blooms Level
2. a. List the maximum number of tables required for the following ER diagram to convert into relational model:	8	CO2	2



b. Briefly discuss about the database languages.	7	CO1	1
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(OR)

c. How is data stored in a magnetic disk? Explain with suitable diagram.	8	CO2	1
d. Explain heap file and hash file organization in DBMS.	7	CO3	1
3.a. Consider the following schema:	8	CO1	2

Employee (Eid, Ename, address)

Project (Pid, Pname, Pduration)

Write the relational algebraic expression for the following queries.

- (i) Find the name of the employees working at Mumbai.
- (ii) Find the Project details whose duration is five years.
- (iii) Find the Details of the Employee who work in ORACLE project
- (iv) Find the address of the Employee whose work in 'SQL' and duration is 9 years.

b.	Give the details of storage architecture in DBMS.	7	CO1	1
(OR)				
c.	Give a short note on Database development life cycle.	8	CO2	2
d.	Briefly explain on TRC and DRC with suitable example.	7	CO2	1
4.a.	Define candidate keys and super keys. Find the candidate keys in the following relations also calculate the prime and non-prime attributes	8	CO3	2
	R (A, B, C, D)			
	FD = {A → B, C → D}			
b.	Explain query processing using suitable block diagram.	7	CO3	1
(OR)				
c.	Explain database constraints with suitable examples.	8	CO2	1
d.	The primary keys of the records are given as:	7	CO4	2
	5,1,3,12,10,18, 2,7,10,20			
	Using B <sup>+</sup> tree of order 4, explain how the records are arranged in the file.			
5.a.	Explain transaction properties states with suitable diagram.	8	CO4	1
b.	Define concurrency along with its advantages and limitations.	7	CO4	1
(OR)				
c.	Explain time Lock based protocol and Time stamp protocol in transaction.	8	CO4	1
d.	Explain lossy and lossless decomposition.	7	CO3	2

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