SET	1

INDIAN SCHOOL MUSCAT
FIRST PRE-BOARD EXAMINATION JANUARY 2023
COMPUTER SCIENCE (083)

CLASS:XII Max.Marks: 70

MARKING SCHEME			
SET	QN.NO	VALUE POINTS	MARKS SPLIT UP
A		**SECTION A**	
	1	No . A mutable data type cannot be key of a dictionary.	1
	2	ii) Total iv)_Data	1
	3	d) 2	1
	4	a) URL	1
	5	(b) index()	1
	6	(a) D:S:P:	1
	7	(b) or (c) DML	1
	8	(b) Foreign Key	1
	9	(b) Tuple	1
	10	c. Delete from student where FirstName=”Pawan”;	1
	11	24	1
	12	(c) 4	1
	13	(c) print(T[1:8:2])	1
	14	(b) ALTER	1
	15	(b) Count (*)	1

	16	(b) tell()	1
	17	(d) A is false but R is True	1
	18	(c) A is True but R is False	1
		SECTION B	

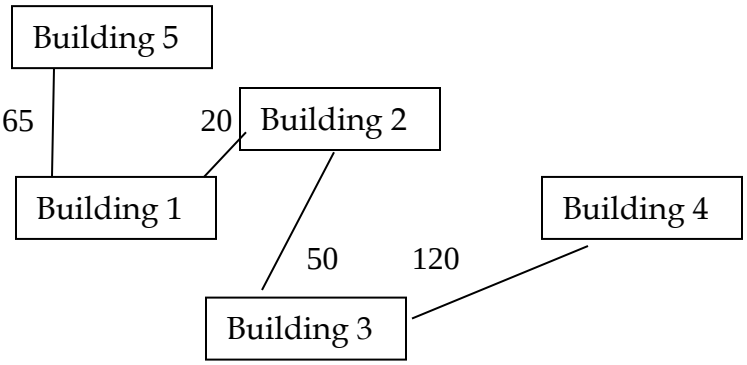
	19	def checkval():
		x =int(input("Enter a number"))
		if x % 2= =0:
		print (x, "is even")
		elif x<0:
		print (x, "should be positive")
		else:
		print (x, "is odd")
		(½ Mark for each correct correction made and underlined.)
			2

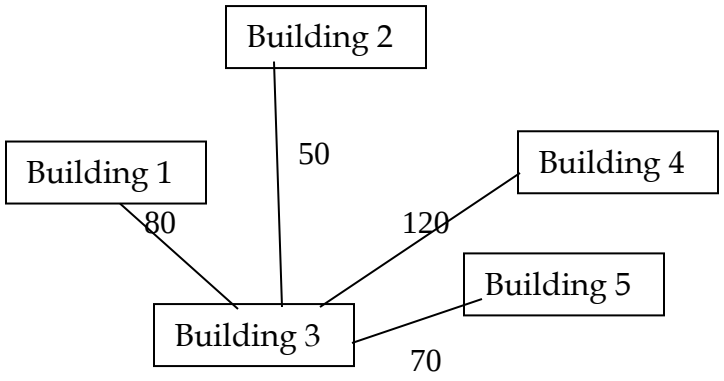
	20	Definition - protocol (1 Mark) Two Examples ((½ Mark for each) **OR** Any two advantage of star tiopology . (1 Mark each)	2
	21	(a) Output: @22niaiaEEB@ (1 Mark) (b) Output: dict_items([('name', 'Varun'), ('age', 27), ('address', 'Chennai')]) (1 Mark)	2
	22	Degree of relation –definition (1 Mark) Cartesian product- definition (1 Mark)	2
	23	(a) 10. (1 Mark) (b) List of tuples (1 Mark)	2
	24	a) i)XML - Extensible Markup Language ii)SMTP – Simple Mail Transfer Protocol ((½ Mark for each) b) Function of a bridge(1 Mark)	2
	25	Output : Error in statements newstr += characterreturn newstr or if considered newstr += character	2

		return newstr H*ll* h*w *r* y** (2 Marks) **OR** Output: Error (random.randrange() is to be used) (2 Marks) If corrected, Output option is (i)	
		SECTION C	
	26	(a) tuple- a row in a relation (b) natural join –joining two tables based on common column. Common column appear only once in the output. (1 Mark) (b) Output: (i) max(salary) min(salary) (½ Mark) --- 200000 65000 (ii) Name , JobTitle Sales (½ Mark) --- Sumit Sinha Vice President 110000 Vijay SinghTomar President 130000 Mohit Kumar Vice President 125000 (iii) JobId count(*) (½ Mark) --- 102 2 101 1 103 2 (iv) JobId JobTitle Salary (½ Mark) --- 103 Administrator Assistant 80000 104 Accounting Manager 70000	3
	27	(½ Mark for correctly opening and closing the file 2 Marks for correct logic ½ Mark for displaying the correct output) **OR** (½ Mark for correctly opening and closing the file 2 Marks for correct logic ½ Mark for displaying the correct output)	3
	28	i)SELECT * FROM RECIPIENT ORDER BY RECNAME; ii) SELECT COUNT(*),RECCITY FROM RECIPIENT GROUP BY RECIPIENT; iii)SELECT * FROM SENDER WHERE SENDERCITY='MUMBAI'; (1 Mark for each query)	3

	29	(½ mark for correct function definition 2 Marks for correct logic ½ mark for displaying the correct output)	3

	30	# (first option)
		def PUSH(Fruitbasket):
		STK=[]
		for I in Fruitbasket:
		if Fruitbasket[Quantity]>100:
		STK.append(I)
		(1½ Marks for PUSH)
		def POP(STK):
		if len(STK)==0:
		print('Stack empty-underflow')
		else:
		x=STK.pop()
		print('Element popped is ',x)
		(1½ Marks for POP)
		# (second option)
		def STACKPUSH(Student):
		STK=[]
		for I in Student:
		if Student[I][0]=='A':
		STK.append(Student[I])
		(1½ Marks for PUSH)
		def POP(STACK):
		if len(STACK)==0:
		print('Stack empty-underflow')
		else:
		x=STACK.pop()
		print('Element popped is ',x)
			3

		SECTION D	
	31	(i) Layout 1 (Bus Topology) .  5->1->2->3->4	5

		Total cable length = 255 m may be considered as cable length is short. (ii) Layout 2 (Star Topology)  Total cable length = 320 m. (1 Mark for the correct layout) (ii) Yes.Repeater is needed in bus layout between 3 and 4 building because according to this layout the distance between buildings 3 and 4 is 120mts. In Star layout , Repeater is needed between 3 and 4 and also between 1 & 3.(1 Mark) iii) a)radio wave (½ mark) b)WAN (½ mark) iv) The most suitable place to house the server is the building 3. In the 3 building we have the maximum number of computers installed (110 no's), so as per the 80 - 20 network design rule the server should be placed in that building where the network traffic is maximum localized which reduces the cabling cost and increases the efficiency. (1 Mark) v) Optical fiber. (1 mark)	
	32	a) The new string is : Ss1sUs3sEs5sTs (2 marks) b) Statement 1: (1 mark) AR=PIC.connect(host="localhost",user="root",password="tiger",database="GALLERY") Statement 2: (½ mark) AR.cursor() Statement 3: (1 mark) Insert into Painting values({},'{}','{}',{}).format(PicID,Title,Artist,Price) Statement 4: (½ mark) AR.commit() **OR** **a) 15 # 55 # 4 # 10 #** **b)** Statement 1: (21 mark)	5

		(host="localhost",user="root",password="tiger",database="GALLERY") Statement 2: (½ mark) PIC.cursor() Statement 3: (1 mark) QR=select * from Painting where Artist="Van Gogh" Statement 4: (½ mark) GA.fetchall()	
	33	seek() function to access any given position in a file . eg f.seek(20) (1 mark) ½ mark for importing csv module 1½ marks each for correct definition of INSERTREC() and SHOWREC() ½ mark for function call statements) **OR** tell() function to find howmany bytes have been written or read from file(1 mark) ½ mark for importing csv module 1½ marks each for correct definition of Getdata() and Dispdata() ½ mark for function call statements)	5
		SECTION E	
	34	(i) New Degree: 2 (½ mark) New Cardinality: 7 (½ mark) (ii) Admissionnumber (½ mark) and (½ mark for justification) (iii) a. ALTER TABLE STUDENT ADD PHONINUMBER INTEGER; b. UPDATE STUDENT SET FIRSTNAME='PAVAN' WHERE FIRSTNAME='PAWAN'; (1 mark for each correct statement) OR (Option for part iii only) (iii) a. SELECT * FROM STUDENT ORDER BY LASTNAME DESC; b. INSERT INTO STUDENT VALUES(012388,'Varun','Shah','2003-07-14') (1 mark for each correct statement)	4
	35	(i) pickle (1 Mark) (ii) open("Sender.dat","rb") (1 Mark) (ii) pickle.load(f) (1 Mark) (iii) rec[1]==em: (1 Mark)	4

SET	2

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CLASS:XII Max.Marks: 70

MARKING SCHEME			
SET	QN.NO	VALUE POINTS	MARKS SPLIT UP
A		**SECTION A**	
	1	a) 5Total	1
	2	c) ['P','U','T']	1
	3	b) 3	1
	4	(b) Tuple	1
	5	a)index()	1
	6	(a) S:P:D:	1
	7	(c) print(T[1:8:2])	1
	8	(b) tell() dROP	1
	9	((c) URL	1
	10	(a) DELETE	1
	11	7	1
	12	(c) 4	1
	13	(a) DDL	1
	14	c.Delete from student where FirstName="Pawan";	1
	15	(b) Count (*)	1

	16	Foreign key	1
	17	(c) A is True but R is False	1
	18	(d) A is false but R is True	1
		SECTION B	

	19	def checkval():
		x = int(input("Enter a number"))
		if x % 2==0:
		print (x, "is even")
		elif x<0:
		print (x, "should be positive")
		else:
		print (x, "is odd")
		(½ Mark for each correct correction made and underlined.)
			2

	20	Any one difference between a hub and a switch (1 mark) **OR** any two advantages of bus topology. (1 mrk)	2
	21	(a) Output: @20 otnmx SC@ (1 Mark) (b) Output: dict_items([('name', 'Varun'), ('age', 27), ('address', 'Chennai')]) (1 Mark)	2
	22	degree –definition (1 Mark) equijoin- definition (1 Mark)	2
	23	(a) 10. (1 Mark) List of tuples (1 Mark)	2
	24	ARPANET -ADVANCED RESEARCH PROJECTS AGENCY NETWORK ii) GPRS –GENERAL PACKET RADIO SERVICE ((½ Mark for each)	2

		a) Function of a HTTP(1 Mark)	
	25	Error (because of return in prev line) Output : The modified String is: H*llo how *r* *o* **OR** Output option is (i) (1 mark) justification - 1 mark	2
		SECTION C	
	26	(a) DDL DML difference (1 mark) (b) Output: (i) max(salary) min(salary) (½ Mark) --- 200000 65000 (ii) Name , JobTitle Sales (½ Mark) --- Sumit Sinha Vice President 110000 Vijay SinghTomar President 130000 Mohit Kumar Vice President 125000 (iii) JobId count(*) (½ Mark) --- 102 2 101 1 103 2 (iv) JobId JobTitle Salary (½ Mark) --- 103 Administrator Assistant 80000 104 Accounting Manager 70000	3
	27	(½ Mark for correctly opening and closing the file 2 Marks for correct logic ½ Mark for displaying the correct output) **OR** (½ Mark for correctly opening and closing the file 2 Marks for correct logic ½ Mark for displaying the correct output)	3
	28	i)SELECT * FROM RECIPIENT ORDER BY RECNAME; ii) SELECT COUNT(*),RECCITY FROM RECIPIENT GROUP BY RECIPIENT; iii)SELECT * FROM SENDER WHERE SENDERCITY='MUMBAI'; (1 Mark for each query)	3

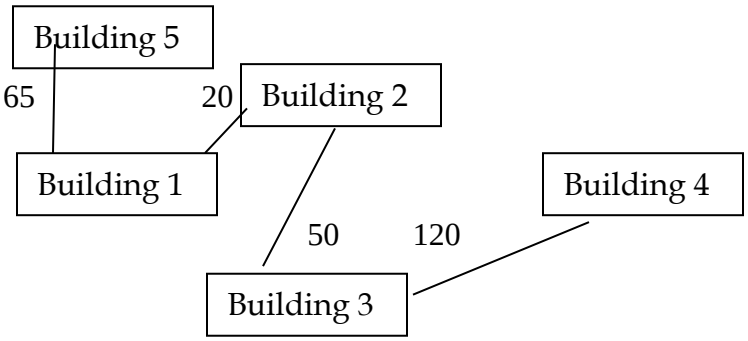
	29	(½ mark for correct function definition 2 Marks for correct logic ½ mark for displaying the correct output)	3

	30	# (first option)
		def PUSH(Customer):
		STK=[]
		for I in Customer :
		if Customer [I]> 35:
		STK.append(I)
		(1½ Marks for PUSH)
		def POP(STK):
		if len(STK)==0:
		print('Stack empty-underflow')
		else:
		x=STK.pop()
		print('Element popped is ',x)
		(1½ Marks for POP)
		# (second option)
		def STACKPUSH(Employee):
		STK=[]
		for I in Employee:
		if I[0]=='A':
		STK.append(Employee [I])
		(1½ Marks for PUSH)
		def POP(STACK):
		if len(STACK)==0:
		print('Stack empty-underflow')
		else:
		x=STACK.pop()
		print('Element popped is ',x)
			3

		SECTION D	
	31	(i)Yes.Repeater is needed in bus layout between 3 and 4 building because according to this layout the distance between buildings 3 and 4 is 120mts. In Star layout , Repeater is needed between 3 and 4 and also between 1 & 3.(1 Mark) ii) a)radio wave (½ mark) b)WAN (½ mark) (iii) The most suitable place to house the server is the building 3. In the 3 building we have the maximum number of computers installed (110 no's), so as per the 80 - 20 network design rule the server should be placed in that building where the network traffic is maximum localized which reduces the cabling cost and increases the efficiency. (1 Mark) (iv)	5

Layout 1 (Bus Topology)

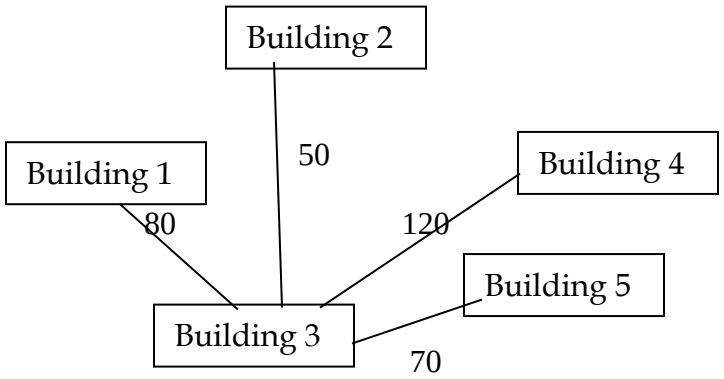
.



5->1->2->3->4

Total cable length = 255 m may be considered as cable length is short.

(i) Layout 2 (Star Topology)



Total cable length = 320 m.

(1 Mark for the correct layout)

v) Optical fiber. (1 mark)

	32	a) The new string is : S1U3E5Ts (2 marks) b) Statement 1: (1 mark) AR=PIC.connect(host="localhost",user="root",password="tiger",database= "GALLERY") Statement 2: (½ mark) AR.cursor() Statement 3: (1 mark) Insert into Painting values({},'{}','{}',{}).format(PicID,Title,Artist,Price) Statement 4: (½ mark) AR.commit() **OR** **a) 15 # 55 # 4 # 10 #** **b)** Statement 1: (21 mark)	5

		(host="localhost",user="root",password="tiger",database="GALLERY") Statement 2: (½ mark) PIC.cursor() Statement 3: (1 mark) QR=select * from Painting where Artist="Van Gogh" Statement 4: (½ mark) GA.fetchall()	
	33	seek() function to access any given position in a file . eg f.seek(20) (1 mark) ½ mark for importing csv module 1½ marks each for correct definition of INSERTREC() and SHOWREC() ½ mark for function call statements) **OR** tell() function to find howmany bytes have been written or read from file(1 mark) ½ mark for importing csv module 1½ marks each for correct definition of Getdata() and Dispdata() ½ mark for function call statements)	5
		SECTION E	
	34	(i) New Degree: 2 (½ mark) New Cardinality: 7 (½ mark) (ii) Admissionnumber (½ mark) and (½ mark for justification) (iii) a. ALTER TABLE STUDENT ADD PHONINUMBER INTEGER; b. UPDATE STUDENT SET FIRSTNAME='PAVAN' WHERE FIRSTNAME='PAWAN'; (1 mark for each correct statement) OR (Option for part iii only) (iii) a. SELECT * FROM STUDENT ORDER BY LASTNAME DESC; b. INSERT INTO STUDENT VALUES(012388,'Varun','Shah','2003-07-14') (1 mark for each correct statement)	4
	35	(i) pickle (1 Mark) (ii) open("Sender.dat","rb") (1 Mark) (ii) pickle.load(f) (1 Mark) (iii) rec[1]==em: (1 Mark)	4

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SET	**3**

MARKING SCHEME			
SET	QN.NO	VALUE POINTS	MARKS SPLIT UP
A		**SECTION A**	
	1	(iii) del L[2]	1
	2	b) Distinct	1
	3	c) 1	1
	4	(b) Tuple	1
	5	b) index()	1
	6	Delete from student where FirstName=”Pawan”;	1
	7	b) or c DML	1
	8	c) dROP	1
	9	((c) URL	1
	10	(c) print(T[1:8:2])	1
	11	b) tell()	1
	12	d) 3	1
	13	D:S:P:	1
	14	Foreign key	1

	15	(b) Count (*)	1
	16	18	1
	17	(d) A is false but R is True	1
	18	(c) A is True but R is False	1
		SECTION B	

	19	def checkval():
		x = int(input("Enter a number"))
		if x % 2==0:
		print (x, "is even")
		elif x<0:
		print (x, "should be positive")
		else:
		print (x, "is odd")
		(½ Mark for each correct correction made and underlined.)
			2

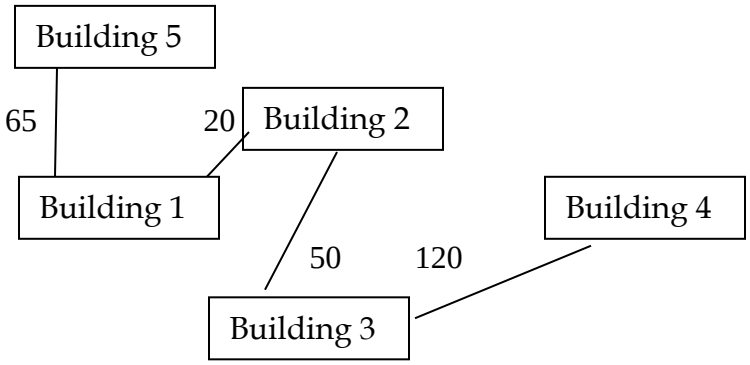
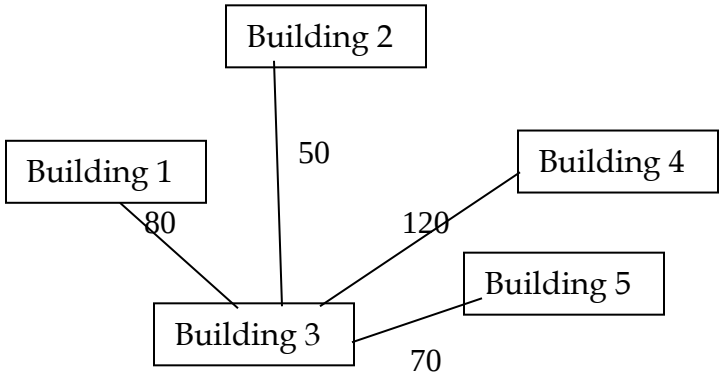
	20	protocol.. 2 examples (1 mark) **OR** Bridge and router difference . (1 mrk)	2
	21	(c) Output: @20 otnmx SC@ (1 Mark) (d) Output: dict_items([('name', 'Varun'), ('age', 27), ('address', 'Chennai')]) (1 Mark)	2
	22	(b) 10. (1 Mark) List of tuples (1 Mark))	2
	23	domain –definition (1 Mark) crossjoin- definition (1 Mark	2
	24	XML ii) HTTPS ((½ Mark for each)	2

		b) Function of a bridge(1 Mark)	
	25	Error in statements newstr += characterreturn newstr or if considered newstr += character return newstr Output : The original String is: Hello how are you The modified String is: H*ll* h*w *r* y** **OR** Output: Output option is (i) (1 mark) justification - 1 mark	2
		SECTION C	
	26	(b) Primary key – attribute which can uniquely identify records Canddiate key- All attributes which can uniquely identify records,which can qualify to be primary key (1 mark) (b) Output: (v) JobId JobTitle Salary (½ Mark) --- 103 Administrator Assistant 80000 104 Accounting Manager 70000 (vi) Name , JobTitle Sales (½ Mark) --- Sumit Sinha Vice President 110000 Vijay SinghTomar President 130000 Mohit Kumar Vice President 125000 (vii) max(salary) min(salary) (½ Mark) --- 200000 65000 (viii) JobId count(*) (½ Mark) --- 102 2 101 1 103 2	3

	27	(½ Mark for correctly opening and closing the file 2 Marks for correct logic ½ Mark for displaying the correct output) **OR** (½ Mark for correctly opening and closing the file 2 Marks for correct logic ½ Mark for displaying the correct output)	3
	28	i)SELECT * FROM RECIPIENT ORDER BY RECNAME; ii) SELECT COUNT(*),RECCITY FROM RECIPIENT GROUP BY RECIPIENT; iii)SELECT * FROM SENDER WHERE SENDERCITY='MUMBAI'; (1 Mark for each query)	3
	29	(½ mark for correct function definition 2 Marks for correct logic ½ mark for displaying the correct output)	3

	30	# (first option)
		def PUSH(Fruits):
		STK=[]
		for I in Fruits:
		if Fruits[I]>100:
		STK.append(flight[I])
		(1½ Marks for PUSH)
		def POP(STK):
		if len(STK)==0:
		print('Stack empty-underflow')
		else:
		x=STK.pop()
		print('Element popped is ',x)
		(1½ Marks for POP)
		# (second option)
		def STACKPUSH(flight):
		STK=[]
		for I in flight:
		if flight[I]>103:
		STK.append(flight[I])
		(1½ Marks for PUSH)
		def POP(STACK):
		if len(STACK)==0:
		print('Stack empty-underflow')
		else:
		x=STACK.pop()
		print('Element popped is ',x)
			3

		SECTION D	
	31	(ii) The most suitable place to house the server is the building 3. In the 3 building we have the maximum number of computers installed	5

		(110 no's), so as per the 80 - 20 network design rule the server should be placed in that building where the network traffic is maximum localized which reduces the cabling cost and increases the efficiency. (1 Mark) (iii) Layout 1 (Bus Topology) .  5->1->2->3->4 Total cable length = 255 m may be considered as cable length is short. (iv) Layout 2 (Star Topology)  Total cable length = 320 m. (1 Mark for the correct layout) (ii) Yes.Repeater is needed in bus layout between 3 and 4 building because according to this layout the distance between buildings 3 and 4 is 120mts. In Star layout , Repeater is needed between 3 and 4 and also between 1 & 3.(1 Mark) (v) a)radio wave (½ mark) b)WAN (½ mark) (vi) Optical fiber. (1 mark)	
	32	c) The new string is : S1U3E5Ts (2 marks) d) Statement 1: (1 mark) AR=PIC.connect(host="localhost",user="root",password="tiger",database= "GALLERY")	5

		Statement 2: (½ mark) AR.cursor() Statement 3: (1 mark) Insert into Painting values({},'{}','{}',{}).format(PicID,Title,Artist,Price) Statement 4: (½ mark) AR.commit() **OR** **c) 15 # 55 # 4 # 10 #** **d)** Statement 1: (1 mark) (host="localhost",user="root",password="tiger",database="GALLERY") Statement 2: (½ mark) PIC.cursor() Statement 3: (1 mark) QR=select * from Painting where Artist="Van Gogh" Statement 4: (½ mark) GA.fetchall()	
	33	a)tell() function to find howmany bytes have been written or read from file(1 mark) ½ mark for importing csv module 1½ marks each for correct definition of INSERTREC() and SHOWREC() ½ mark for function call statements) **OR** seek() function to access any given position in a file . eg f.seek(20) (1 mark) ½ mark for importing csv module 1½ marks each for correct definition of Getdata() and Dispdata() ½ mark for function call statements)	5
		SECTION E	
	34	(j) New Degree: 1 (½ mark) New Cardinality: 7 (½ mark) (iv) Admissionnumber (½ mark) and (½ mark for justification) (v) c. ALTER TABLE STUDENT ADD PHONINUMBER INTEGER; d. UPDATE STUDENT SET FIRSTNAME='PAVAN' WHERE FIRSTNAME='PAWAN'; (1 mark for each correct statement)	4

		OR (Option for part iii only) (iii) a. SELECT * FROM STUDENT ORDER BY LASTNAME DESC; b. INSERT INTO STUDENT VALUES(012388,'Varun','Shah','2003-07-14') (1 mark for each correct statement)	
	35	(iv) pickle (1 Mark) (v) open("Sender.dat","rb") (1 Mark) (ii) pickle.load(f) (1 Mark) (vi) rec[1]==em: (1 Mark)	4