Registration No :

Total Number of Pages : 02 **B.Tech**
PCI7D001

7th Semester Regular Examination 2018-19
WATER RESOURCES SYSTEM AND MANAGEMENT
BRANCH : CIVIL
Time : 3 Hours
Max Marks : 100
Q.CODE : E432

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.
The figures in the right hand margin indicate marks.

Part- I

Q1 **Short Answer Type Questions (Answer All-10)** **(2 x 10)**

a) What is cost-benefit analysis?
b) Briefly describe about system analysis technique.
c) Define optimal solution.
d) What is scrap value?
e) What is sinking fund factor?
f) What is salvage cost?
g) Define the term depreciation.
h) What do you mean by environmental impact assessment?
i) Explain cash flow diagram.
j) Define Bellman's principle of optimality.

Part- II

Q2 **Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)** **(6 x 8)**

a) What are the objectives of water resources planning and management?
b) Define system and give its classification.
c) What do you mean by integrated water resources management? Explain.
d) Explain the emerging techniques of data acquisition and processing of water quality model.
e) Explain about the acquisition and processes stream flow data in reservoir operation modelling.
f) Differentiate between linear programming and dynamic programming.
g) Explain the concept of tangible and intangible benefits in water resources projects.
h) Explain simulation and its importance in solving water resources problems.
i) Write a note on reservoir operation and method to determine reservoir capacity.
j) What are the ecological, environmental and economic impact of dams and reservoirs?
k) Describe the processes of environmental impact assessment.
l) Write a note on Time value of money.

Part-III

Long Answer Type Questions (Answer Any Two out of Four)

Q3 **a)** Using simplex method, find the optimal solution of the following problem (Graphically). **(10)**

Maximize $z=3x+2y$

Subject to constraints $x+2y\leq 6$

$2x+y\leq 8$

$-x+y\leq 1$

$y\leq 2$ $x, y\geq 0$

Show the feasible solution space and direction of increase of objectivefunction.

b) Write a note on socio-economic characteristics of water resources system. **(6)**

Q4 **a)** Solve the water allocation problem to maximize the form using backward recursive dynamic programming. The total water available is 50 units. This is to be allocated in discrete units in multiples of 0, 10, 20. The return from four users for a given allocation are as follows : **(10)**

Allocations	Returns from users			
	(1)	(2)	(3)	(4)
0	0	0	-3	1
10	3	4	3	1
20	5	4	5	1
30	6	4	5	7
40	3	6	2	10
50	3	7	0	10

b) Discuss the difference between present worth annuity and future worth annuity. **(6)**

Q5 **a)** A person borrows Rs 50lakhs at a discount rate of 9.5%. The loan is taken for a period of 15 years. Determine the equal amount instalment to be paid at end of each year to repay the loan, repayment component in 3rd year and interest component in 3rd year. **(10)**

b) How a simulation model is different from an optimization model developed for multiple reservoir system? **(6)**

Q6 **a)** Write short notes on (i) capital recovering factor (ii) Amortization. **(10)**

b) Explain the role of dynamic programming in solving water resources problems. **(6)**

Registration no: B.PHARM-

Total Number of Pages: Sub Code:

(---th) Semester Regular / Back Examination: 2018-19

SUB:

Time: 3 Hours

Max Marks: 75 Q Code Exam Date

Answer Question No.1 (Part-A) and 02 (Part-B) which are compulsory and any two from Part-C.
The figures in the right hand margin indicate marks.

Part- A

Q1	Objective Answer Type Questions (Answer All)		(02x10)
	a)		
	b)		
	c)		
	d)		
	e)		
	f)		
	g)		
	h)		
	i)		
	j)		
		Part- B	
Q2	Focused-Short Answer Type Questions- (Answer Any Seven)		(05x07)
	a)		
	b)		
	c)		
	d)		
	e)		
	f)		
	g)		
	h)		
	i)		
		Part-C	
		Long Answer Type Questions (Answer Any Two)	

Q3			(10)
Q4			(10)
Q5			(10)
Q6			(10)

Registration no:

Total Number of Pages: 0	**Course:???**
	SUB_CODE: ???
(---th) Semester Regular / Back Examination: 2018-19	
SUBJECT NAME:?????	
BRANCH:???	
Time: 3 Hours	
Max Marks: 70	
Q.CODE:??? / Exam Date	
Answer Question No.1 which is compulsory and any five from the rest.	
The figures in the right hand margin indicate marks.	

Q1		**Answer the following questions:**	**(2 x 10)**
	a)		
	b)		
	c)		
	d)		
	e)		
	f)		
	g)		
	h)		
	i)		
	j)		

Q2	**a)**		**(5)**
	b)		**(5)**
Q3	**a)**		**(5)**
	b)		**(5)**
Q4	**a)**		**(5)**
	b)		**(5)**
Q5	**a)**		**(5)**
	b)		**(5)**
Q6	**a)**		**(5)**
	b)		**(5)**
Q7			**(10)**
Q8		**Write short answer on any TWO:**	**(5 x 2)**
	a)		
	b)		
	c)		
	d)		