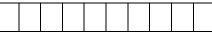
AR 20

Reg. No





QPC: RD20BTECH377

GIET UNIVERSITY, GUNUPUR – 765022

B. Tech (Fifth Semester – Regular) Examinations, December – 2022

BPCCV5020 - Water Resource Engineering (Civil Engineering)

Time: 3 hrs						num: 70 Marks					
Answer ALL Questions											
The figures in the right hand margin indicate marks.											
PART – A: (Multiple Choice Questions) $(1 \times 10 = 10 \text{ M})$											
<u>Q</u> .1	l. Ans	wer ALL questions			[CO#]	[PO#]					
a.	Unit I	Hydrograph theory was enunciated by			CO1	PO1					
	i.	Merril Bernard	ii.	W.W. Horner							
	iii.	Le-Roy K. Shermen	iv.	Robert E. Horten.							
b.	The tl	heory of infiltration capacity was given	n by		CO1	PO1					
	i.	Merrill Bernard	ii.	W.W. Horner							
	iii.	Le-Roy K. Shermen	iv.	Robert E. Horten.							
c.											
	i.	predicting the effects on the river	ii.	deciding the minimum reservoir							
		water level on completion of dams		capacity							
	iii.	predicting maximum flows	iv.	all the above.							
d.	The s	urface Run-off is the quantity of water	•		CO2	PO3					
	i.	absorbed by soil	ii.	intercepted by buildings and vegetative cover							
	iii.	required to fill surface depressions	iv.	that reaches the stream channels							
e.	Pick t	up the correct equation from the follow	ving:		CO1	PO1					
	i.	Run off = Surface run off +	ii.	Run off = Surface run off - Ground							
		Ground water flow		water flow							
	iii.	Run off = Surface run off / Ground	iv.	Run off = Surface run off x Ground							
		water flow		water flow							
f.	Infiltr	ration capacity of soil depends upon			CO1	PO1					
	i.	number of voids present in the soil	ii.	shape and size of soil particles							
	iii.	compaction of the soil particles	iv.	All the above.							
g.	Pick up the correct statement from the following:				CO1	PO1					
	i.	The actual prevailing rate of	ii.	When rainfall rate is less than the							
		infiltration of water in the soil at		infiltration capacity, the infiltration							
		any time, is known as infiltration		rate is approximately equal to the							
		rate		rainfall rate							
	iii.	When rainfall rate exceeds the	iv.	All the above.							
		infiltration capacity, the water									
		enters the soil at full capacity rate									
h.	The n	nain factor which affects the infiltratio	n capa	icity, is	CO1	PO3					
	i.	thickness of saturated layer	ii.	depth of surface detention							
	iii.	soil moisture	iv.	All the above.							
i.	Absolute humidity in air				CO1	PO1					
	i.	decreases at higher altitudes	ii.	increases at higher altitudes							
	iii.	remains constant at all altitudes	iv.	none of these							
j.	Precip	pitation caused by lifting of an air mas	s due t	to the pressure difference, is called	CO2	PO3					

i. cyclonic precipitation
 ii. convective precipitation
 iii. None of these.

PART – B: (Short Answer Questions)

 $(2 \times 10 = 20 \text{ Marks})$

1 AR1 - D. (Short Answer Questions)									
Q.2.	Answer ALL questions		[C	O#]	[PO#]				
a.	What are the factor effecting precipitation?		C	O1	PO1				
b.	What are the different types of precipitation?		C	O2	PO1				
c.	Explain about trickling filter rain gauge?		C	O3	PO1				
d.	What is the difference between recording and non-recording rain Gauge?		C)2	PO2				
e.	What do you mean by average rainfall over a catchment area?		C	D 1	PO3				
f.	Explain about the factor effecting evapotranspiration?		CO3		PO2				
g.	How vegetation impact the evaporation process?		CO1		PO1				
h.	Define infiltration?		C	O2	PO3				
i.	What are the different factor effecting infiltration?		CO3		PO1				
j.	What is hydraulics jump?		C	D 1	PO3				
PART – C: (Long Answer Questions) (1				$0 \times 4 = 40 \text{ Marks})$					
Ansv	wer ALL questions	N	A arks	CO#	PO#				
3. a	Find out the 12 hour unit hydrograph from 4 hour unit hydrograph ordinat 0,24,84,159,184,151,103,64,36,17,6,0	es	5	CO2	PO2				
b	Explain about the direct runoff hydrograph?		5	CO1	PO2				
	(OR)								
c	Explain the unit hydrograph with proper explanation with diagram?		5	CO1	PO1				
d	. Differentiate between the unit hydrograph and s hydrograph?		5	CO3	PO2				
4. a	Derive the energy loss equation in hydraulic jump?		5	CO1	PO2				
b	What are the design parameter for canal design in open channel flow?		5	CO1	PO3				
(OR)									
c	. What is flooding? And what are the parameter to to control it?		5	CO1	PO1				
d	. Explain about storm hydrograph?		5	CO1	PO1				
5. a	. What are the different causes of flow?		5	CO1	PO1				
b	. Explain about instantaneous unit hydrograph?		5	CO2	PO2				
(OR)									
c	Derive the DRH from the catchment due to storm duration of 4 hr and having rainfall excess of 5cm,	; a	5	CO2	PO2				
d	The coordinates of TUH are 0,8,35,50,47,40,31,23,15,10,6,3,0 Explain about synthetic unit hydrograph?		5	CO1	PO1				
6. a	. What are the different stages of water cycle?		5	CO2	PO2				
b	-		5	CO3	PO1				
(OR)									
c	XXII		5	CO1	PO1				
d			5	CO3	PO3				
	End of Paper								