

GANPAT UNIVERSITY**B. Tech. Semester: III Open Elective Subject****Regular Examination - November 2014****2OS 301 WATER RESOURCES MANAGEMENT****Time: 3 Hours****Total Marks: 70**

- Instructions:**
- 1 Answer to the two sections must be written in separate answer books.
 - 2 Assume suitable data if required.
 - 3 Figures to the right indicate full marks

Section-I

- | Q- No | Question | Marks |
|-----------|---|-------|
| Q-1(a) | Define the term 'Hydrology' and explain the scope of hydrological studies. | 6 |
| Q-1(b) | Explain the 'Hydrological cycle' with a sketch. | 6 |
| OR | | |
| Q-1(a) | Describe different forms of 'Precipitation'. Which of these forms has maximum occurrence? | 6 |
| Q-1(b) | State the types of 'Rain gauges' and describe any one with sketch. | 6 |
| Q-2(a) | Define the term 'Infiltration' and draw a typical infiltration curve describing its details. Narrate the factors affecting infiltration. | 6 |
| Q-2(b) | Describe different methods of estimating 'Precipitation' over a given catchment | 5 |
| OR | | |
| Q-2(a) | Describe different types of hydrological losses associated with the precipitation | 6 |
| Q-2(b) | Determine the average Rainfall over the catchment as given below by Thiessen polygon method. The rainfall recorded at the various rain-gauge stations and the area of the Thiessen polygons are shown in the table: - | 5 |

Station	A	B	C	D	E
Area of Thiessen Ploygon in sq. km.	145	190	220	350	270
Precipitation 'P' recorded in cm	3.2	3.8	4.2	3.7	2.5

- Q-3** Answer any three of the following:- 12
- (1) Narrate the Factors affecting precipitation
 - (2) Write a short note on 'Efficient Water Use, -a need of the day'
 - (3) Types of 'Precipitation'
 - (4) Factors affecting runoff
 - (5) Computations of Precipitation by 'Isohyetal Method'

[PTO]

Section-II

Q - No	Question	Marks
Q-4(a)	What is 'Irrigation' ? State the importance of 'Irrigation' .	6
Q-4(b)	What is Over-Irrigation? What are the adverse effects of it?	6
OR		
Q-4(a)	State different forces acting on a Gravity Dam	6
Q-4(b)	What is 'Homogeneous' type of Earthen Dam? What are the limitations of its construction?	6
Q-5(a)	Draw a typical section of a Diaphragm type of Earth Dam. In which circumstances, the diaphragm earth dam is constructed?	6
Q-5(b)	Define the term 'Flood' and establish the importance of flood study	5
OR		
Q-5(a)	Describe points to be attended while fixing the canal alignment	6
Q-5(b)	Draw a typical 'Hydrograph' and briefly describe its parameters	5
Q-6	Answer any three of the followings:	12
	(1) Disadvantages of Lift Irrigation	
	(2) Write a note on Watershed Management	
	(3) Methods of Irrigation	
	(4) Fall structures on Canal	
	(5) Flood estimation methods	

END OF PAPER