

**PARUL UNIVERSITY**  
**FACULTY OF ENGINEERING & TECHNOLOGY**  
**B.Tech. Summer 2018 - 19 Examination**

**Semester: 5****Subject Code: 03104302****Subject Name: Hydrology And Water Resources Engineering****Date: 17/05/2019****Time: 10.30 am to 1.00 pm****Total Marks: 60****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

**Q.1 Objective Type Questions - (All are compulsory) (Each of one mark)****(15)**

1. Hydrograph is a graphical representation of \_\_\_\_\_
2. An isohyet is a line joining points of \_\_\_\_\_.
3. The perched aquifer is \_\_\_\_\_.
4. Which of the following is a non-recording type Raingauge-
 

(a) Tipping bucket type	(b) Weighing type
(c) Floating type	(d) Symons raingauge
5. Precipitation includes-
 

(a) Humidity	(b) Temperature
(c) Rain	(d) all of the above
6. Pick up the correct statement from the following :
  - (a) Hydrograph is a plot of Rainfall and days
  - (b) In hydrographs, Rainfall is plotted on X-axis
  - (c) The maximum flow in the river due to rainfall, is called peak flow
  - (d) all the above
7. Unsteady flow towards a well is identified when \_\_\_\_\_
8. Write Dalton's equation of evaporation.
9. Define Transpiration.
10. The flow-mass curve is graphical representation of \_\_\_\_\_
11. Hyetograph is a graphical representation of \_\_\_\_\_
12. Write any two factors affecting Transpiration.
13. Lysimeter is used for measuring \_\_\_\_\_
14. Define Aquifer.
15. Define Aquiclude.

**Q.2 Answer the following questions. (Attempt any three)****(15)**

- A) Differentiate Surface and Ground water Hydrology.
- B) Explain in detail with neat sketch the double mass curve technique to check the consistency of rainfall data.
- C) Explain various climatic factors affecting run-off.
- D) Explain any two types of Evaporimeter with suitable diagrams

**Q.3 A) Explain the various types of dam with their suitability.****(07)**

- B) A 30 cm well completely penetrates an unconfined aquifer of saturated depth 40 m. after a long period of pumping at a steady rate of 500 lpm, the drawdown in two observation wells 25 and 75 m from the pumping well were found to be 3.5 and 2.0 m respectively. Determine the transmissivity of the aquifer. What is the drawdown at the pumping well?

**OR**

- B) Explain site assessment and selection for type of dam.

**(08)****Q.4 A) Derive the expressions for steady state radial flow into a well under confined aquifer conditions with suitable sketches.****(07)****OR**

- A) Describe the methods used for determining average depth of rainfall over an area.

**(07)**

- B) The hourly ordinates of a two-hour unit hydrograph are given below. Derive a six-hour Unit hydrograph for the same catchment. **(08)**

Time in hr	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Discharge in cumec	0	1.2	2.9	5.2	8.2	10	9.2	7.7	6.5	5.2	4.2	3.1	2.3	1.5	0.7	0.03