Name:

Enrolment No:

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End term Examination – December 2018

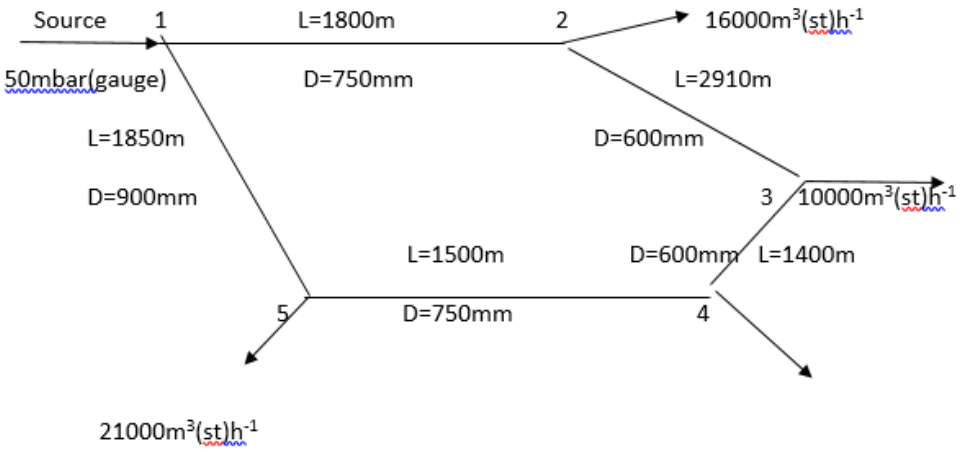
Program: MTECH PLE **Semester: III**
Course: Pipeline Network Analysis **Time: 03 hrs.**
Code: MATH801
Max Marks :100

SECTION A (20)

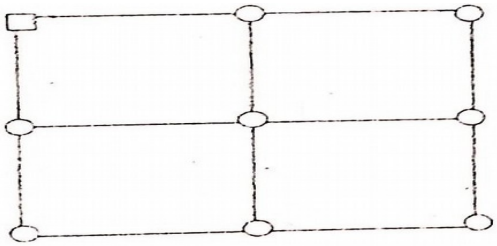
1	i)	Explain design of Mother CNG station	**05**	**CO2**
	ii)	Describe challenges in CGD	**05**	**CO2**
	iii)	Explain transient analysis in detail	**10**	**CO5**

SECTION B (40 Marks)

2	Derive equation for newton nodal correction factor	**10**	**CO3**
3	Explain pressure regulating stations in CGD	**10**	**CO2**
4	Calculate flow rate in each pipe by using Hardy Cross Method, Use two iterations Given f=0.01 and G=0.6.	**20**	**CO3**



SECTION-C (Answer any two 40 Marks)

6	i) For the following network with square bracket as a reference node draw spanning tree and find the number of independent loop that need to be analyzed and explain network topology 	**10**	**CO4**
	ii) Derive equation for equivalent diameter for two parallel pipelines	**10**	**CO3**
7	With the aid of diagram explain following terms of graph theory a) Nodes – Nodes Representations b) Nodes- Branches Representations c)Combined Representations d)Branches Loop Representation	**20**	**CO4**
8	i)What are assumptions made in derivation of general flow equations ii) Derive general flow equation, medium flow equations and low pressure distribution equations	**20**	**CO1**