

**R16**

**Code No: 138BA**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**B. Tech IV Year II Semester Examinations, September - 2020**

**COAL GASIFICATION COAL BED METHANE AND SHALE GAS**

**(Mining Engineering)**

**Time: 2 Hours**

**Max. Marks: 75**

**Answer any Five Questions  
All Questions Carry Equal Marks**

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- 1.a) Explain factors affecting underground coal gasification.
- b) List the merits of Underground Coal Gasification (UCG). [7+8]
2. Explain the thermo-chemical processes during the UCG syngas generation. [15]
- 3.a) State depending factors for carbonization and heating value of the product gas.
- b) Explain the terms i) Firedamp ii) Volatiles iii) Fixed carbon. [7+8]
- 4.a) Describe the basic component factors for UCG process.
- b) Describe the Filtration Process of UCG. [8+7]
- 5.a) Explain the stream method of UCG.
- b) Explain the borehole procedure method. [7+8]
- 6.a) Explain the Chamber method of UCG.
- b) Discuss the applicability and operation technique of stream method. [7+8]
- 7.a) Discuss the applicability and operation technique Non-Mining method of inclined seams method of UCG.
- b) State the advantages of Seams method of UCG. [8+7]
8. Discuss various case histories for linkage establishment in different countries. [15]

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