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Question Paper Code: 59516

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2019

Elective

Electronics and Instrumentation Engineering

15UEI916 - INSTRUMENTATION AND CONTROL FOR PETROCHEMICAL
INDUSTRIES

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

- Which is called Black Gold? (R)
(a) crude oil (b) lube oil (c) diesel oil (d) fuel oil
- Hydrogen percentage (by weight) in crude petroleum may be about (R)
(a) 5 (b) 15 (c) 25 (d) 35
- Petrol is also known as
(a) Gasoline (b) LPG (c) Petroleum (d) Crude oil
- The Thermally enhanced oil recovery is _____ injection.
(a) Microbial (b) Steam (c) Gas (d) Chemical
- Which of the following is almost pure Carbon?
(a) Asphalt (b) Residual fuel (c) Coke (d) Distillate fuel
- The process used to convert paraffins into isoparaffins is
(a) Cracking (b) Isomerisation
(c) Polymerisation (d) Alkylatio
- The important raw material used for the production of Poly Vinyl Chloride is
(a) Methane (b) Ethane
(c) Ethylene oxide (d) VCM

8. High Density Polyethylene (HDPE) is produced under _____ pressure.
 (a) High (b) Low (c) Very high (d) Constant
9. Coking is a method of
 (a) Thermal Cracking (b) Catalytic Cracking
 (c) Reforming (d) Alkylation
10. The _____ is used for preventing the error rather than it is corrected.
 (a) Feedback control (b) Feedforward control
 (c) Ratio control (d) Selective control

PART - B (5 x 2 = 10 Marks)

11. What is adsorption?
 12. Define catalytic cracking.
 13. State the properties of VCM
 14. What is octane number?
 15. What is meant by LEL and UEL?

PART - C (5 x 16 = 80 Marks)

16. (a) Justify the need for petroleum recovery and Enumerate the various recovery techniques in petroleum processing. (16)
 Or
 (b) Explain the various recovery techniques in the petroleum plant. (16)
17. (a) Discuss with neat P and I diagram the production of ethylene from petroleum. (16)
 Or
 (b) Explain the steps involved in polymerization. (16)
18. (a) Write down the physical and chemical properties of polypropylene (16)
 Or
 (b) Describe the process involved in the manufacturing process of methanol. (16)
19. (a) How is boiler feed rate measured in a refinery? Name the various flow measuring instruments in a petroleum industry. (16)
 Or
 (b) Describe the common methods of density measurement in petroleum evaporator station with the aid of neat sketch. (16)

20. (a) Discuss the techniques used to reduce explosion hazards in petrochemical industries with neat diagram (16)

Or

(b) Demonstrate the methods followed in mechanical isolation in petrochemical industries. (16)
