Printed Pages:02 **Sub Code: NCH 031**

Paper Id: | 1 | 5 | 1 | 8 | 0 | 3 | **Roll No.** | | | | | | | | | | |

B.TECH

(SEM VIII) THEORY EXAMINATION 2017-18

PETROLEUM ENGINEERING

Time: 3 Hours ***Total Marks: 100***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2 x 10 = 20

a) What is the role of soaker drum in Visbreaking?
b) Define Asphaltenes.
c) What is Resins?
d) What are the components of LPG?
e) Why do we use vacuum distillation for crude oil?
f) Define Octane number.
g) Define fire point.
h) Give five uses of diesel
i) Write any two Catalytic Reforming reactions.
j) Define ductility.

SECTION B

2. Attempt any *three* of the following: 10 x 3 = 30

a) Give various theories for the formation of oil and gas.
b) Explain the various laboratory tests for petroleum in details.
c) Give the characteristics of crude oil.
d) Describe the atmospheric distillation of crude oil also discuss its main petroleum products with neat diagram.

e) What is visbreaking? Describe the conventional visbreaking process with a neat flowsheet.

SECTION C

3. Attempt any *one* part of the following: 10 x 1 = 10

a) Explain fluid catalyst cracking process with neat diagram.

b) What is sweetening process? Explain sulfur conversion process in detail.

4. Attempt any *one* part of the following: 10 x 1 = 10

a) With the help flowsheet, explain the process of re-refining of spent lube oils. Also explain the significance of this process.

b) Explain calcinations of green coke in detail.

5. Attempt any *one* part of the following: 10 x 1 = 10

(a) What is the role of solvent extraction? Explain any one process with flowsheet.

(b) What is coking? Write its types and also discuss the flexi-coking.

6. Attempt any *one* part of the following: 10 x 1 = 10

a) What is the thermal conversion processes used in a petroleum refinery? Explain anyone in detail with a neat flow diagram.

b) How is bitumen manufactured from crude oil? Discuss the process in detail.

7. Attempt any *one* part of the following: 10 x 1 = 10

a) Describe the process which is used to remove furfural, NMP and phenol from lube oils. Also draw a neat flow – diagram of the process.

b) Explain air and inhibitor process in detail.