

1st Year / Chemical Engg. (P&P)
Subject : Introduction to Chemical Engineering and
Paper Technology

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory
(6x1=6)

- Q.1 When the lines of action of all the forces of a system act along the same line, this force system is called?
a) Collinear b) Parallel
c) Concurrent d) Non-concurrent
- Q.2 The wood-pulp grinding machine was first commercialized in which of the following countries?
a) France b) Russia
c) Germany d) India
- Q.3 What is value of 1 g cm^{-3} density of a substance in kg m^{-3} ?
a) 10 b) 100
c) 1000 d) 10000
- Q.4 The spent cooking liquor from sulfite pulping is usually called?

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- a) White liquor b) Pink liquor
 c) Green liquor d) Brown liquor
- Q.5** Which of the following is not an example of unit operation?
 a) Distillation b) Alkylation
 c) Absorption d) Humidification
- Q.6** Which of the following is a heteropolysaccharide?
 a) Lignin b) Glucomannan
 c) Cellulose d) Hemicelluloses

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. $(6 \times 1 = 6)$

- Q.7** What is coplanar force system?
Q.8 What is value of 5 N of force in dyne?
Q.9 Define the pulp?
Q.10 What is S.I unit of heat?
Q.11 Write the name of any one unit operation?
Q.12 Which particular parameter is used to express the percentage, by oven-dry weight, of pulp obtained from the original wood weight?

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. $(8 \times 4 = 32)$

- Q.13** Describe different non coplanar force systems in brief.

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- Q.14** State and explain causticizing efficiency?
Q.15 How will you select a site for setting up of paper industry, discuss in brief?
Q.16 What is difference between unit operation and unit process.
Q.17 Define the kappa number? Discuss its significance?
Q.18 Describe the important applications of paper?
Q.19 Discuss the different career opportunities in the field of paper technology?
Q.20 What is difference between total alkali, active alkali and effective alkali?
Q.21 Define and discuss triangle law of forces in brief?
Q.22 What is bleachability? Discuss its importance?

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. $(2 \times 8 = 16)$

- Q.23** Describe the process for manufacture of cement with the help of process flow diagram depicting the various unit processes and unit operations involved?
Q.24 Discuss the important physical and chemical characteristics of pulp which are to be considered for making good quality paper?
Q.25 What is chemical composition of wood? Describe the properties and significance of important constituents of wood?

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