Q.28 Explain any two unit operation used in Heat Transfer.

Q.29 Write a short note on Blake Jaw crusher.

Q.30 Define Humid heat and Humid volume.

Q.31 Define screening, give its importance.

Q.32 Write a short note on batch distillation.

Q.33 Draw the sketch of cycle separator explains it's working

Q.34 With a neat sketch, explain the working of ball mill.

Q.35 Explain Fick's law of diffusion.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 Explain the principle and use of first and second law of thermodynamics.

Q.37 Explain with a neat sketch, working, uses of the shell and tube heat exchanger?

Q.38 Explain principle, working and use of filter press with neat sketch.

No. of Printed Pages : 4 182241/122241/032241
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4th Sem / Plastic
Subject :- Fundamentals of Chemical Engineering/ Unit operation

Time : 3Hrs. M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 Units of thermal conductivity is:-

a) Kelvin b) W/(m·k)

c) Watt / (m^2·K) d) W /)m·C^o)

Q.2 An closed system is one in which_____

a) Mass does not cross boundaries of the system, through energy may do so

b) Neither mass nor energy crosses the boundaries of the system

c) Both energy and mass cross the boundaries of the system

d) Mass crosses the boundary but not the energy

Q.3 Fourier law is related to

a) Conduction b) Convection

c) Radiation d) All of these

Q.4 Which of the following works on principle of compression and impact?

a) Jaw crusher b) Gyratory crusher

c) Fine crusher d) Tramp crusher

Q.5 The S.I unit of temperature is_____.

a) Centrigrade b) Celsius

c) Fahrenheit d) Kelvin

Q6 What is the unit of diffusion coefficient?

a) m^2 b) s

c) m^2 s d) m^2/s

Q.7 Humidification is a

a) Mass transfer operation

b) Heat transfer operation

c) Simultaneous heat and mass transfer

d) Neither mass and heat transfer operation

Q8 Joule was the first scientist to prove that heat is a type of energy, which work on the fundamental law of thermodynamics.

a) False b) True

Q.9 Which of the following laws is applicable for the behavior of perfect gas_____

a) Boyle's law b) Charles's law

c) Gas-Lussac law d) All of the above

Q.10 Which is not a Mechanical operation

a) Agitation b) Filtration

c) Humidification d) Size enlargement

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

Q.11 Write conduction.

Q.12 Define insulator.

Q.13 Define isolated system

Q.14 Define work

Q.15 Define mesh number.

Q.16 Define thermal conductivity.

Q.17 Define crushing.

Q.18 Define isothermal process.

Q.19 Define heat transfer.

Q.20 Define Entropy.

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Explain Fourier's law of heat transfer.

Q.22 Describe the first law of thermodynamics.

Q.23 Define the principle of ball mill and give its use.

Q.24 State bond's law and Kick's law of crushing.

Q.25 Write the difference between crushing and grinding.

Q.26 Explain homogeneous and heterogeneous system with example.

Q.27 Explain Isothermal process of thermodynamics.