

: જોઇ :

B.Sc. Sem. 6

Sub code: 21868

૧. દરેક પ્રશ્નનો [a] અથવા [a(i)] અને [a(ii)] ન લખવાના રહેશે.

૨. પ્રશ્ન : વ[a] અથવા વ[a(i)] અને વ[a(ii)] તથા ર[a] અથવા ર[a(i)] અને ર[a(ii)] ના 14 માર્ક્સ ના બદલે ૧૮ માર્ક્સ રહેશે.

૩. પ્રશ્ન : ર[a] અથવા ર[a(i)] અને ર[a(ii)] તથા ઝ[a] અથવા ઝ[a(i)] અને ઝ[a(ii)] ના 14 માર્ક્સ ના બદલે ૧૭ માર્ક્સ રહેશે.

૪. દરેક પ્રશ્નનો પ્રશ્ન નં વ(b), પ્રશ્ન નં ર(b), પ્રશ્ન નં ર(b) તથા પ્રશ્ન નં ઝ(b) (ટુંકા પ્રશ્નો) વિદ્યાર્થીએ લખવાના નથી.

- Que.1 (A) Explain principle, construction and uses of jaw crusher. [14]
- OR
- Que.1 (A-1) Why size reduction is required? Discuss it. [07]
- (A-II) State and explain uses of hammer mill and smooth roll crusher. [07]
- Que.1 (B) Give the answer of following question. (Any four) [04]
- (1) Give equation for crushing efficiency?
- (2) \_\_\_\_\_ gives a definite shape in size reduction.
- (3) Give types of communiting.
- (4) Crushing efficiency ranges between \_\_\_\_\_ to \_\_\_\_\_ %.
- (5) Which type of size reduction equipment is agitated mill?
- (6) In which unit operation "Attrition" the word is used?
- Que.2 (A) Explain types of flow pattern in detail. [14]
- OR
- Que.2 (A-1) Differentiate fluid and solid. [07]
- (A-II) State and explain laminar and turbulent flow. [07]
- Que.2 (B) Give the answer of following question. (Any four) [04]
- (1) Give Newton's law of viscosity.
- (2) Which type of fluid is an oil?
- (3) Which type of flow has  $R_N > 4000$ ?
- (4) Give unit of density.
- (5) Which fluids are available in nature?
- (6) The ratio of inertia force to the viscous force is known as \_\_\_\_\_.
- Que.3 (A) Discuss its construction, working and principle of tube axial fan. [14]
- OR
- Que.3 (A-1) Write a note on gear pump. [07]
- (A-II) State and explain uses of ball valve and gate valve. [07]

- Que.3 (B) Give the answer of following question. (Any three) [03]
- (1) Air inlet is also known as \_\_\_\_\_.
  - (2) Which type of fan was used in ventilation exhausting?
  - (3) Which type of pump can handle dirty water?
  - (4) In which flow density of fluid is constant?
  - (5) Give equation for  $R_N$ .
- Que.4 (A) What is heat exchanger? Explain it with example. [14]
- OR
- Que.4 (A-I) State and explain uses of 1-1 type heat exchanger. [07]
- (A-II) State and explain uses of 1-2 type heat exchanger. [07]
- Que.4 (B) Give the answer of following question. (Any three) [03]
- (1) Which solution is used for leaching of cobalt?
  - (2) Give any one name of solvent which is used in cotton seeds extraction.
  - (3) Who play dominant role in mechanism of leaching?
  - (4) Which shape of screw conveyor was used in Hildebrandt extractor?
  - (5) Which solution is used for leaching of copper?