

These are sample MCQs to indicate pattern, may or may not appear in examination

University of Mumbai
Online Examination 2020

Program: BE Mechanical Engineering

Curriculum Scheme: Revised 2012

Examination: Final Year Semester VII

Course Code: MEC703 and Course Name: Mechanical utility systems

Time: 1hour

Max. Marks: 50

Note to the students:- All the Questions are compulsory and carry equal marks .

- Q The performance of single stage reciprocating air compressor is evaluated by its-
- A Isentropic efficiency
- B Isothermal efficiency
- C Adiabatic efficiency
- D Volumetric efficiency
- Q Which one of the following methods can be adopted to obtain nearly isothermal compression in an air compressor?
- A Increasing the weight of the compressor
- B Inter-stage heating
- C Atmospheric cooling
- D Providing appropriate dimensions to the cylinder
- Q For reciprocating compressor without clearance volume, volumetric efficiency is always-
- A

100%

B		75%
C		50%
D		25%
Q	A large clearance volume in reciprocating compressor results in	
A	Reduced volume flow rate	
B	Increased volume flow rate	
C	Lower suction pressure	
D	Lower delivery pressure	
Q	With increase in speed of reciprocating compressor volumetric efficiency	
A	Increases	
B	Decreases	
C	Remains constant	
D	First increases then decreases	
Q	In an axial flow compressor, the ratio of pressure rise in the rotor blades to the pressure rise in one stage is known as	
A	Work factor	
B	Slip factor	
C	Degree of reaction	
D	Pressure coefficient	
Q	Surging is phenomenon of	
A	Steady, periodic and reversed flow	
B	Unsteady, periodic and reversed flow	
C	Unsteady, periodic and uniform flow	
D	One dimensional, steady and uniform flow	
Q compressor is used in gas turbine.	
A	Reciprocating	
B	Centrifugal	
C	Axial	

- D Vane
- Q Acceleration head developed in case of reciprocating pump is inversely proportional to-
- A Length of pipe
- B Speed of pump
- C Cross sectional area of pipe
- D Cross sectional area of piston
- Q For small discharge and high heads which pump is preferred?
- A Centrifugal type
- B Reciprocating type
- C Axial flow type
- D Radial flow type
- Q Cavitation will take place if the pressure of the flowing fluid at any point is
- A more than vapour pressure of the fluid
- B equal to vapour pressure of the fluid
- C less than vapour pressure of the fluid
- D Twice of vapour pressure of fluid
- Q The ratio of the power output of the pump to the power input to the pump is known as
- A manometric efficiency
- B mechanical efficiency
- C volumetric efficiency
- D overall efficiency
- Q A centrifugal pump needs 1000 W of power when operating at 1500 RPM. What is the power requirement if the speed of the pump is increased to 3000 RPM?
- A 2000 W
- B 4000 W
- C 6500 W
- D 8000 W

Q The vertical distance between centre line of the centrifugal pump and water surface in the sump from which water is to be lifted is known as

A suction head

B delivery head

C static head

D manometric head

Q What is impact of impeller trimming on flow & pressure of pump?

flow decreases but pressure increases

A

B both flow & pressure increase

C both flow & pressure decrease

D both flow & pressure remain constant

Frictional head developed during delivery stroke in case of reciprocating pump is maximum when crank angle is.....Degrees.

Q

A 0

B 45

C 90

D 180

Q In case of compressor a situation of fixed mass flow rate regardless of pressure ratio is called as-

A choking

B surging

C stalling

D Flow separation

Q detector is used to find out leakage in compressed air network.

A Sonic

B Subsonic

C Supersonic

D Ultrasonic

Q Method used to balance radial thrust in case of centrifugal pump is-

- A Use of double suction impeller
- B Balancing hole
- C Use of ball thrust bearing
- D Double volute casing

Q Head developed by centrifugal pump is directly proportional to square of speed

- A inversely proportional to square of speed
- B directly proportional to cube of speed
- C inversely proportional to cube of speed
- D

Q Saving of power which would have been expended in friction, by fitting an air vessel to double acting reciprocating pump is of the order of-

- A 39.20%
- B 49.20%
- C 68.80%
- D 84.8%

Q In two stage reciprocating compressor with perfect inter cooling if air is sucked inside the reciprocating compressor at 1 bar and if it is delivered at 16 bar then ideal intercooler pressure is

- A 2 bar
- B 4 bar
- C 8 bar
- D 10 bar

Q The operating point in pumping system is identified by point of intersection of

- A system curve & efficiency curve

- B pump curve & power curve
- C pump curve & system curve
- D pump curve and discharge curve

Q The correct sequence of centrifugal pump components through which fluid flows is

- A Impeller, suction pipe, foot valve, delivery pipe
- B Foot valve, suction pipe, Impeller, delivery pipe
- C Impeller, suction pipe, delivery pipe, foot valve
- D Suction pipe, delivery pipe, Impeller, foot valve

Q Series combination of centrifugal pump is used to-

- A increase head
- B decrease head
- C increase discharge
- D decrease discharge

