Assignment 6

The due date for submitting this assignment has passed. **Due on 2018-03-21, 23:59 IST.**

Submitted assignment

1) Consider the following statements regarding the axial flow pump:
   (i) The function of inlet guide vanes is to direct properly the fluid to the rotor
   (ii) The function of outlet guide vanes is to eliminate the whirling component of velocity
   (iii) The number of impeller blades usually lies between 9 and 12.

Out of these statements:

- only (i) is correct
- (i) and (ii) are correct
- (i) and (iii) are correct
- (i), (ii) and (iii) are correct

**No, the answer is incorrect.**

**Score:** 0

**Accepted Answers:**
(i) and (ii) are correct

2) In a reciprocating pump without air vessels, the acceleration head in the suction/delivery pipe is maximum when the crank angle is

- 0°
- 90°
- 120°
- 180°

**No, the answer is incorrect.**

**Score:** 0

**Accepted Answers:**
0°

3) In a reciprocating pump without air vessels, the friction head in the suction/delivery pipe is maximum when the crank angle is

- 0°
- 90°
- 120°
- 180°

**No, the answer is incorrect.**

**Score:** 0

**Accepted Answers:**
90°
4) During delivery stroke of a reciprocating pump, separation may take place
   - at the beginning of the stroke
   - at the middle of the stroke
   - at the end of the stroke
   - at any position
   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   at the end of the stroke

5) Indicator diagram shows for one complete revolution of crank the
   - variation of kinetic head in the cylinder
   - variation of rotational speed of the crank
   - variation of linear velocity of the piston inside the cylinder
   - variation of pressure head in the cylinder
   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   variation of pressure head in the cylinder

6) Which of following are the beneficial effects of air vessel fitted to delivery side of a reciprocating pump?
   (i) Constant rate of discharge can be ensured
   (ii) Power consumption can be reduced
   (iii) Discharge can be increased
   (iv) Constant velocity of the piston can be ensured
   Select the correct answer using the codes given below:
   Codes:
   - (i) and (iv)
   - (i) and (ii)
   - (ii) and (iv)
   - (i) and (iii)
   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   (i) and (ii)

7) A single acting reciprocating water pump delivers 200 litres of water per second against a suction head of 4 m and a delivery head of 16 m. The power required to drive the pump is approximately \((\text{g}= 10 \, \text{m/s}^2)\)
   - 10
   - 20
   - 40
   - 80
   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   40

8) A single acting reciprocating pump has a bore of 25 cm and stroke of 40 cm runs at 30 rpm. It discharges water at the rate of 0.009 \(\text{m}^3/\text{s}\). The suction and delivery heads are 7 m and 15 m respectively. The percentage slip will be in the range of
   - 1 to 3%
   - 4 to 6 %
   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   4
9) The pressure rise in a centrifugal compressor is achieved by
   - the decrease in volume and diffusion action
   - the centrifugal action and decrease in volume
   - the centrifugal and diffusion action
   - the centrifugal and push-pull action

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   8 to 10% 10

10) Consider the following statements in respect of centrifugal compressors:

   (i) Work done on the air in the diffuser is zero.
   (ii) Static pressure on the forward side of the vane is slightly lower than on the trailing face.
   (iii) Static pressure of the air increases from the eye to the tip of the impeller.

   Out of the above statements:
   - only (i) is correct
   - (i) and (ii) are correct
   - (i) and (iii) are correct
   - (i), (ii) and (iii) are correct

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   (i) and (iii) are correct