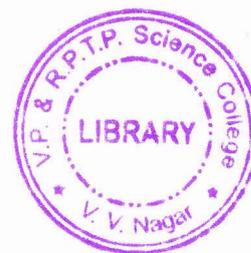


VITHALBHAI PATEL&RAJRATNA P.T. PATEL SCIENCE COLLEGE  
VALLABH VIDYANAGAR  
INTERNAL TEST – 2013  
B.Sc. (SEMESTER - III)



Date: 04.10.2013  
Day: Friday

Time: 1.00 pm to 2.30 pm  
Total marks:30

Subject: PHYSICAL CHEMISTRY (US03CCHE02)

Q-1.Choose the one alternative that best completes the statement or answers the question. (06)

- (i) The second law of thermodynamics say that
- (a) energy can be created but not destroyed
  - (b) energy can be created and destroyed
  - (c) one usable form of energy can be completely converted into another usable form
  - (d) one usable form of energy cannot be completely converted into another usable form
- (ii) A heat engine
- (a) takes heat in , does work , and loses energy heat
  - (b) converts work to an equivalent amount of heat
  - (c) converts heat input to an equivalent amount of work
  - (d) uses positive work done on the system to transfer heat from a low temperature reservoir to a high temperature reservoir
- (iii) Which of the following is not a colligative property?
- (a) elevation of boiling point
  - (b) osmotic pressure
  - (c) freezing point
  - (d) lowering of vapour pressure
- (iv) Which of the following cannot be used to find out the molecular weight of non-volatile solute?
- (a) Victor Meyer's method
  - (b) ebullioscopic method
  - (c) osmotic pressure
  - (d) cryoscopic method
- (v) In the reaction :  $\text{Cu}_{(s)} + 2 \text{Ag}^+_{(aq)} \rightarrow \text{Cu}^{2+}_{(aq)} + 2 \text{Ag}_{(s)}$  ,the reduction half-cell reaction is :
- (a)  $\text{Cu} + 2 \text{e}^- \rightarrow \text{Cu}^{2+}$
  - (b)  $\text{Ag}^+ + \text{e}^- \rightarrow \text{Ag}$
  - (c)  $\text{Cu} - 2 \text{e}^- \rightarrow \text{Cu}^{2+}$
  - (d)  $\text{Ag} - \text{e}^- \rightarrow \text{Ag}^+$
- (vi) For the cell reaction to be spontaneous
- (a)  $E^\circ$  is -ve
  - (b)  $\Delta G$  is +ve
  - (c)  $E^\circ$  is +ve
  - (d) both  $\Delta G$  and  $E^\circ$  are +ve