Reg. No: …………………………
Name: ……………………………

Seventh Semester B. Tech Degree Examination, Model Question Paper
(2013 Scheme)
13.703 AUTOMOTIVE AIR CONDITIONING SYSTEMS (U)

Time: 3 Hours                                                                                                         Max. Marks: 100

PART-A
Answer all questions. Each question carries 2 marks

1) What is the difference between refrigeration and air-conditioning?
2) What is the function of clutch in an automotive air conditioning unit?
3) What is psychrometry? Define adiabatic saturation temperature.
4) What is the function of heater core used in an automotive air conditioning unit?
5) How can you differentiate a drier and an accumulator used in air-conditioning system?
6) What are the safety precautions to be taken while handling a refrigerant?
7) What do you mean by refrigeration system diagnostics?
8) How the air flowing into the cabin is controlled during different cabin load conditions?
9) What are the various preliminary system inspections to be performed before performing any of the service procedures?
10) What are the effects of compressor failure?

(10x2=20 Marks)

PART-B
Answer any one full question from each Module. Each question carries 20 marks

Module – I

1) a) With neat labeled sketch mention the working of a typical airconditioning system 10
b) What are the different compressor components which help in the proper functioning of an automotive air conditioning unit? 10

OR

2) a) How thermostatic expansion valve control the flow of refrigerant into an evaporator. Draw a neat sectional view of TEXV. 10
b) What are the different types of evaporator controls used in an automotive air-conditioning unit to control the evaporator temperature? 10

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Module – II

3) a) How the automotive air conditioning and heater systems regulate the temperature of air inside a cabin?  
   b) With the aid of a labeled sketch write the working of Ford Automatically controlled air-conditioner and heater system.

   OR

14) a) What are the different devices used to safeguard the automotive air conditioning unit? How it operates and protects the device?

   b) What are the different types of manually controlled refrigeration systems used in old vehicles?

Module – III

15) a) What are the procedures to be followed for filling fresh refrigerant into the automotive air conditioning unit?

   b) What are the different techniques and methods adopted to detect a leak in automotive air conditioning unit?

   OR

16) a) What are the different procedures for removing, installing and trouble shooting a compressor while refrigeration system diagnostics?

   b) What are the different tools used for the diagnosis of an automotive air conditioning unit?

Module – IV

17) a) How servicing and repairing of an automotive heating system is done?

   b) How cabin temperature is maintained steady automatically with the help of an automotive air conditioning unit?

   OR

18) a) What are the different chances of leak in an automotive air conditioning system? How it can be rectified?

   b) What is the importance of flushing an air conditioning system? What are the different flushing procedures designed to ensure that the entire cooling and heating systems are cleaned out?