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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**

**PTO**

**Module – II**

- 3) a) How the automotive air conditioning and heater systems regulate the temperature of air inside a cabin? **10**
- b) With the aid of a labeled sketch write the working of Ford Automatically controlled air-conditioner and heater system. **10**

**OR**

- 14) a) What are the different devices used to safeguard the automotive air conditioning unit? How it operates and protects the device? **10**
- b) What are the different types of manually controlled refrigeration systems used in old vehicles? **10**

**Module – III**

- 15) a) What are the procedures to be followed for filling fresh refrigerant into the automotive air conditioning unit? **10**
- b) What are the different techniques and methods adopted to detect a leak in automotive air conditioning unit? **10**

**OR**

- 16) a) What are the different procedures for removing, installing and trouble shooting a compressor while refrigeration system diagnostics? **10**
- b) What are the different tools used for the diagnosis of an automotive air conditioning unit? **10**

**Module – IV**

- 17) a) How servicing and repairing of an automotive heating system is done? **10**
- b) How cabin temperature is maintained steady automatically with the help of an automotive air conditioning unit? **10**

**OR**

- 18) a) What are the different chances of leak in an automotive air conditioning system? How it can be rectified? **10**
- 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? **10**

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