TRADE TEST OF CRAFT INSTRUCTOR
(SEMESTER SYSTEM)
JULY-2015

TRADE: ELECTRONICS MECHANIC
SUB: TRADE THEORY –II

MARKS: 100
TIME: 3 Hrs.

Note: Attempt all questions.

1. a) State True and false. (15 x 1=15)
   i) In PIC16F microcontroller INT is an external interrupt pin.
   ii) The data memory are also contain the data EEPROM memory.
   iii) Set top boxes have pregame guide embedded in them.
   iv) LEDs can be build at any size.
   v) A ceiling fan motor with its speed regulator but without blades is an example of electric drive.
   vi) Microwave oven uses microwaves of frequency 2.4 GHz.
   vii) A cluster of red, green and blue diodes is driven together to form a full-color pixel, usually square in shape.
   viii) A more advanced form of CCTV, utilizing digital video recorder (DVRs), provides recording for possibly many years.
   ix) Pressure regulating value is an supply elements.
   x) An IGBT has three terminals called Collector, Emitter and Base.
   xi) PLC reads limit switch.
   xii) Electric drives are mainly of two types: DC drives & AC Drives.
   xiii) The Slip of a three phase induction motor can be measured by stroboscopic method.
   xiv) For Squirrel cage induction motor and slip ring induction motor, rotor have different construction.
   xv) Servomotor achieve the same performance in both direction on rotations.

b) Fill in the blanks. (15 x 1=15)
   i) Number of pins in 16F PIC microcontroller is ____________.
   ii) Remote control are of _________ types.
   iii) Video surveillance is also known as ____________.
   iv) LED uses array of ____________.
   v) IEMI number is used to trace ____________ Mobile.
   vi) Microwave oven is a ____________ device.
   vii) In semi-automatic washing machine ____________ intervention is required.
   viii) ____________ text display is used in a bus/metro train.
   ix) Roofer lever valves are ____________ elements.
   x) PLC is a ____________.
   xi) GSM stands for ____________.
   xii) Three point starter has only ____________ Terminals.
   xiii) A single phase full convertor drive consists of ____________ full convertor.
   xiv) The output frequency of three phase convertor is ____________ than those of single phase convertor.
   xv) Servomotors are intended to be used in ____________ loop speed position control system.

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2. Attempt Any Twenty questions. 
   a) Write advantages of RISC.
   b) Define the term watch dog timer.
   c) Write the available memory in PIC16F devices.
   d) State the difference between CTV and LED TV.
   e) List the use of CCTV.
   f) Write difference between CCFL and HCFL.
   g) Write the name of various types of interface.
   h) Describe the features of cell phones.
   i) Name any two techniques adopted in cell phone mobile communication.
   j) State that advantages of water purifier.
   k) Draw the circuit diagram of power supply.
   l) Draw the symbol of different electro pneumatic components.
   m) Write name of different supply elements.
   n) Describe the principle of working of immersion heater.
   o) Name the various parts of mixer/ grinder.
   p) Draw the block diagram of program ladder logic.
   q) Differentiate between small and micro PLCs.
   r) Describe the electrical leakage.
   s) Explain incremental encoder used in servomotor.
   t) Explain the terms.
      i) Slip                      ii) Slip speed
   u) State the factor that influences the speed of a DC motor.

3. Attempt any Five questions of the following:- 

   a) Explain interrupt and reset vectors.
   b) Explain the working of 4 point starter.
   c) Explain stacking of LED’s.
   d) Explain the working principle of PLC.
   e) Describe the working principle of CCTV. Draw a CCTV network diagram for
      illustration.
   f) Describe the function of memory valve and also write their application.
   g) Explain the operation of a microwave oven with the help of block diagram.
Note: Attempt any Five questions. All question carry equal marks.

1. Develop and execute a program to perform serial communication using USART.

2. Identify and rectify the faulty parts on the given remote control.

3. Test various subassemblies of the given LED light system.

4. Perform the interfacing of cell phone/smart phone to the PC and transfer the photos.

5. Identify and rectify the faults in the given faulty vacuum cleaner.

6. Perform a setup to connect and configure PLC hardware on the software.

7. Perform the connection to run a three phase motor using Star/ Delta starter.