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**Question Paper Code: 50481**

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

ONE CREDIT COURSE

Electronics and Communication Engineering

15UEC862 - PCB DESIGN

(Regulation 2015)

Duration: One hour

Maximum: 50 Marks

Answer ALL Questions

PART A - (30 x 1 = 30 Marks)

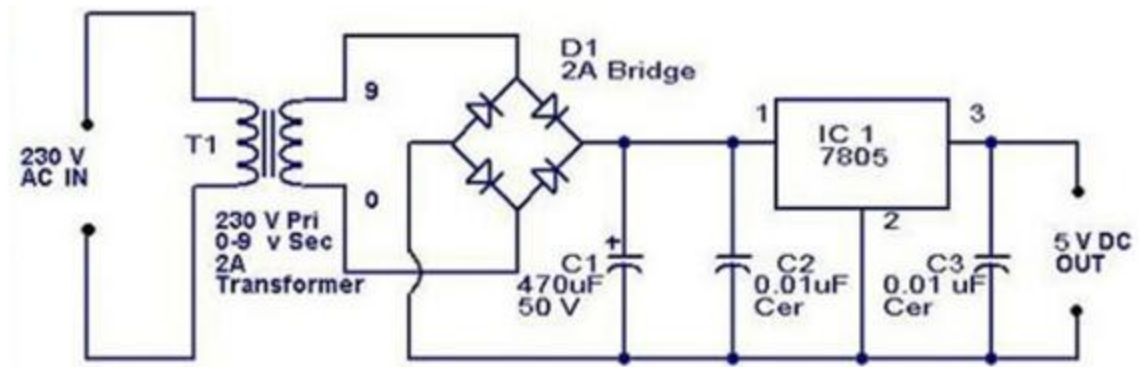
- Before the iron process the PCB called
  - fixed board
  - copper clad board
  - brass board
  - silver board
- Component placed only on top side called
  - Multilayer
  - Single layer
  - Double layer
  - Three layer
- \_\_\_\_\_ used for soldering.
  - Ferric chloride
  - Ferrous chloride
  - SiO<sub>2</sub>
  - Carbon
- Modern devices are used as
  - Single layer
  - Double layer
  - Multi layer
  - None of these
- A resistor with colour bands Red, Violet, Green and Black will have a value
  - 27 K  $\pm$  10% K
  - 2.7 M  $\pm$  20% K
  - 270 K  $\pm$  5% K
  - 2.7 K  $\pm$  2% K
- If two resistor are connected in series, is the final resistance
  - Higher
  - Lower
  - Same
  - Not determined
- Thermocouple is a type of
  - Switch
  - Resistor
  - Rectifier
  - Diode

8. Microfarad equivalent to  
(a)  $10^{-12}$                       (b)  $10^{-4}$                       (c)  $10^{-6}$                       (d)  $10^{-8}$
9. If we connect the capacitor in parallel, it act as  
(a) Storage device                      (b) Filter  
(c) Switch                      (d) Charging/Discharging
10. Which produce magnetic flux  
(a) Condensor                      (b) Iron                      (c) Inductor                      (d) Transistor
11. Example for semiconductor  
(a) Diode                      (b) Resistor                      (c) Capacitor                      (d) Inductor
12. The varactor diode is usually  
(a) forward biased                      (b) reverse biased  
(c) unbiased                      (d) holes and electronics
13. LED produces \_\_\_\_\_ generation light resulting in high efficiency.  
(a) cold                      (b) hot                      (c) normal                      (d) none of these
14. The minimum gate current which can turn on SCR is called  
(a) trigger current                      (b) holding current  
(c) junction                      (d) break over current
15. Piezo-electric convert  
(a) Electrical into mechanical                      (b) Mechanical into electrical  
(c) Vibration into electrical                      (d) Electrical into light
16. The stepper motor which have multiple coils that are organized in groups called  
(a) Phases                      (b) Neutral                      (c) Rotor                      (d) Stator
17. Which switch made an electromagnet?  
(a) Transistor                      (b) MOSFET                      (c) SCR                      (d) Relay
18. Which convert light energy into electrical energy?  
(a) LED                      (b) Photo diode                      (c) Filter                      (d) LVDT

19. Identify the correct statement
- (a) The cathode lead is longer. it goes to negative rail
  - (b) The cathode lead is shorter. it goes to negative rail
  - (c) The cathode lead is shorter. it goes to positive rail
  - (d) The cathode lead is longer. it goes to positive rail
20. Electron flow assumes charges flow from
- (a) Positive to Negative
  - (b) Positive to Positive
  - (c) Negative to Positive
  - (d) Negative to Negative
21. Sensor which is used to sense human
- (a) IR
  - (b) PIR
  - (c) Precipitations
  - (d) Accelerometer
22. LM-35 use \_\_\_\_\_ as the source.
- (a) Pressure
  - (b) Heat
  - (c) Vibration
  - (d) None of these
23. Which IC give a desired output?
- (a) IC 78XX
  - (b) IC 555
  - (c) IC 4017
  - (d) MAX 232
24. IC 4017 counts from
- (a) 0 to f
  - (b) 0 to 99
  - (c) 0 to 9
  - (d) 0 and 1
25. Which device used to transfer electrical energy from one circuit into another circuit without changing the frequency?
- (a) Generator
  - (b) AC motor
  - (c) Transformer
  - (d) DAC
26. Which chemical is used for etching process?
- (a) ferric chloride
  - (b) sulphuric acid
  - (c) ferrous sulphate
  - (d) hydrochloric acid
27. IC stands for
- (a) integrated circuit
  - (b) intelligence circuit
  - (c) intensive circuit
  - (d) internal component
28. LED stands for
- (a) Light Emitting Diode
  - (b) Light Emitted Display
  - (c) Liquid Emitted Display
  - (d) None of these
29. The most popular form of IC package is
- (a) DIL
  - (b) Flat pack
  - (c) TO-5
  - (d) None of these

30. In a ac house hold appliance the frequency is in \_\_\_\_\_Hz.

- (a) 230                      (b) 220                      (c) 50                      (d) 60



PART - B (1 x 20 = 20 Marks)

31. (a) (i) Give the types of diodes with necessary diagrams. (10)  
(ii) Explain the working function of the following circuits. (10)

Or

- (b) (i) Explain about the process of PCB layout design in software with an example. (10)  
(ii) Write some software name for design a PCB layout and briefly explain about any one. (10)

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