(Time: 3 Hours) **[Total Marks: 80]**

N.B: (1) Question No.1 is compulsory.
(2) Solves any three out of remaining question.
(3) Assume suitable data if necessary.

Q.1	Solve any Four		
	a.	State the phases of new product development.	05
	b.	What are the metrics in software designing?	05
	c.	What is shielding? Explain with neat diagram.	05
	d.	State clearly the limitations and advantages of the Spiral model in EPD.	05
	e.	What is the difference between active and passive component.	05
Q.2	a.	Design the front panel of a function generator by taking care of ergonomics and aesthetic design considerations.	10
	b.	Explain the concept of coupling and cohesion.	10
Q.3	a.	Explain the V Cycle model with all the steps and proper justification.	10
	b.	What is the need of PCB testing? Explain the following methods of PCB testing in details:- i) In-circuit testing ii) Functional testing iii) Boundary scan testing iv) Complex board testing	10
Q.4	a.	What is the role of characterization in case of debugging and troubleshooting?	10
	b.	Explain how mapping of functions to hardware is done in architectural design.	10
Q.5	a.	Write the checklist for developing effective Manuals for the international Market.	10
	b.	How to handle EMI/EMC issues in an Electronic Product?	05
	c.	Explain the need of ESD Protection in PCB Designing.	05
Q.6	Write short note on (any four)		
	a.	Different grounding methodologies	05
	b.	Need of Prototyping	05
	c.	Black box testing and white box testing	05
	d.	Different types of termination methods used in PCB designing	05
	e.	Different software models with advantage and disadvantage	05

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