

Code No: I5602/R16

M. Tech. I Semester Regular/Supple Examinations, Jan/Feb-2018

HVDC TRANSMISSION

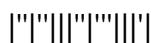
Common to Power Systems(56),PSC &A(53),PSE(30),PS & C(31),EPS(65),
ADV PS(50),EPE(60),Power Electronic (43),PI&D(42),PE & ED(54),PE & D (52),
PE & S(12),EM & D(44),Power Electronics & Power Systems (99),
High Voltage Engineering (62) ,PS WITH Emphasis ON H.V. Engg (29) and High Voltage
Power Systems Engineering(64),

Time: 3 Hours

Max. Marks: 60

*Answer any FIVE Questions
All Questions Carry Equal Marks*

- | | | |
|------|---|-----|
| 1. a | Explain the types of HVDC links and its purpose with neat diagrams | 6M |
| b | Mention the advantages of HVDC technical economical reliability aspects | 6M |
| 2. | With a neat sketch explain the working of 12pulse converter circuit. | 12M |
| 3. a | Mention the reasons for generation of harmonics in HVDC transmission | 6M |
| b | Explain in detail about equidistance firing angle scheme. Also list the draw backs. | 6M |
| 4. a | Mention the importance of multi-terminal DC links. | 6M |
| b | Explain the significance of DC power modulation | 6M |
| 5. a | Discuss the operation of surge arrestors for overvoltage protection of HVDC Systems | 6M |
| b | Explain how transient over voltages are produced due to faults on DC side | 6M |
| 6. a | Discuss the list of dominant harmonics present in the various types of HVDC Converters. | 6M |
| b | Explain briefly By-pass valve and its use | 6M |
| 7. a | Explain the function of smoothing reactor in a HVDC Transmission system. | 6M |
| b | What are the over voltages due to disturbances on AC system side? Explain | 6M |
| 8. a | Write state notes on the following | 6M |
| | i) Over current protection | |
| | ii) Over voltages on the HVDC system | |
| b | Briefly describe the various faults that occur in converter station? Explain. | 6M |



Code No: G5602/R13

M. Tech. I Semester Supplementary Examinations, Jan/Feb-2018

HVDC TRANSMISSION

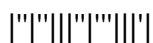
Common to Power Systems(56),PSC &A(53),EPS(65),
ADV PS(50),EPE(60),Power Electronic (43),PI&D(42),PE & ED(54),PE & D (52),
EM & D(44),Power Electronics & Power Systems (99),
High Voltage Engineering (62) and High Voltage Power Systems Engineering(64),

Time: 3 Hours

Max. Marks: 60

Answer any FIVE Questions
All Questions Carry Equal Marks

- | | | |
|------|---|-----|
| 1. a | Explain the types of HVDC links and its purpose with neat diagrams | 6M |
| b | Mention the advantages of HVDC technical economical reliability aspects | 6M |
| 2. | With a neat sketch explain the working of 12pulse converter circuit. | 12M |
| 3. a | Mention the reasons for generation of harmonics in HVDC transmission | 6M |
| b | Explain in detail about equidistance firing angle scheme. Also list the draw backs. | 6M |
| 4. a | Mention the importance of multi-terminal DC links. | 6M |
| b | Explain the significance of DC power modulation | 6M |
| 5. a | Discuss the operation of surge arrestors for overvoltage protection of HVDC Systems | 6M |
| b | Explain how transient over voltages are produced due to faults on DC side | 6M |
| 6. a | Discuss the list of dominant harmonics present in the various types of HVDC Converters. | 6M |
| b | Explain briefly By-pass valve and its use | 6M |
| 7. a | Explain the function of smoothing reactor in a HVDC Transmission system. | 6M |
| b | What are the over voltages due to disturbances on AC system side? Explain | 6M |
| 8. a | Write state notes on the following | 6M |
| i) | Over current protection | |
| ii) | Over voltages on the HVDC system | |
| b | Briefly describe the various faults that occur in converter station? Explain. | 6M |



Code No: G6806/R13

M. Tech. I Semester Supplementary Examinations, Jan/Feb-2018

DIGITAL SYSTEM DESIGN

(Common to VLSI & ES, ES & VLSI, VLSID & ES, ES & VLSID, VLSI, VLSID, VLSISD, VLSI&ME, ES, DE&CS, E&CE and DECE)

Time: 3 hours

Max. Marks: 60

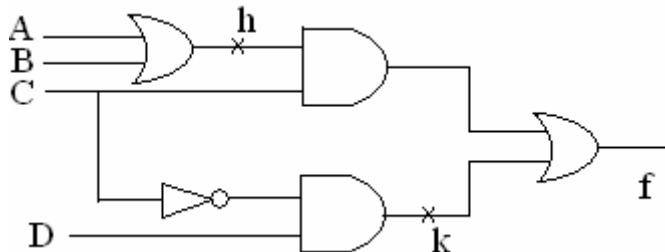
*Answer any FIVE Questions
All Questions Carry Equal Marks*

1. a Find the CAMP printout when it minimizes the following given function 6M
 $F(a, b, c, d) = \Pi M(2, 4, 9, 15)$
b The cubical form of a Boolean function is given below 6M
 $F = 0112 + 1002 + 1221 + 2112$ Find all intersecting pairs of cubes without help of a k-map.

2. a What are the various programmable logic devices? Compare them 4M
b Implement the following Boolean functions using PAL 8M
 $F1(X, Y, Z) = \sum(1, 2, 4, 6)$ $F2(X, Y, Z) = \sum(0, 1, 6, 7)$ $F3(X, Y, Z) = \sum(2, 6)$

3. a Draw the general structure of a CPLD and explain how a logic function can be realized on CPLD with simple example. 6M
b Design an ASM chart for a serial adder with accumulator and show the control block diagram. 6M

4. a Find all the tests to detect h SA0 and k SA1 faults by applying path sensitization technique to the given circuit below. 6M



- b List out the properties of Boolean difference method? 6M
- 5 a Find a preset distinguishing experiment that determines the initial state of the machine shown in table. Given that it cannot be initially in state E. 6M
b Can you identify the initial states when the initial uncertainty is (ABCDE)? 6M

Ps	Ns, z x=0, x=1
A	B,1 A,1
B	E,0 A,1
C	A,0 E,1
D	C,1 D,1
E	E,0 D,1

Code No: G6806/R13

6. Determine the essential prime cubes for the following four variable single output function using IISc algorithm 12M
 $f = 0200 + 1102 + 2201 + 0011 + 0010$
7. a What are the basic building blocks of an ASM chart? Draw the ASM chart of a SR flip flop. 6M
b Describe briefly the various DFT schemes used in digital systems? 6M
8. a Discuss in detail about reduction of state tables and state assignments. 6M
b Explain briefly about Passport checking in CAMP algorithm with suitable example. 6M

