

**APJ ABDULKALAM TECHNOLOGICAL UNIVERSITY
08 PALAKKAD CLUSTER**

Q. P. Code :ES0819042A-I

(Pages:2)

Name

Reg. No:.....

SECOND SEMESTER M.TECH. DEGREE EXAMINATION JUNE 2019

Branch: Electrical & Electronics Engineering

Specialization: Energy Systems

08EE6042(A) Hydro Power Systems

Time:3 hours

Max.marks: 60

Answer all six questions.

Modules 1 to 6: Part 'a' of each question is compulsory and answer either part 'b' or part 'c' of each question.

Q.no.	Module 1	Marks
1.a	Define specific speed.	3
Answer b or c		
b	Derive the Euler's turbine equation.	6
c	Sketch and explain Francis turbine.	6
Q.no.	Module 2	Marks
2.a	Define Hydrography.	3
Answer b or c		
b	Enumerate the importance of mini and micro hydro power systems.	6
c	Explain the power station operation and maintenance in detail.	6
Q.no.	Module 3	Marks
3.a	Write the concept of institutional framework?	3
Answer b or c		
b	Analyse the recent investigation and studies for water power development.	6
c	Discuss in details about power duration curve	6

Q.no.	Module 4	Marks
4.a	Define load duration curve	3

Answer b or c

- | | | |
|----------|--|----------|
| b | Classify the different types of hydro power development. | 6 |
| c | Discuss the system integrated operational studies in hydro power system. | 6 |

Q.no.	Module 5	Marks
--------------	-----------------	--------------

5.a	What is run of river? Give some example.	4
------------	--	----------

Answer b or c

- | | | |
|----------|--|----------|
| b | With neat sketch explain in details about different types of plants. | 8 |
| c | Discuss the various economic aspects in hydro power plants. | 8 |

Q.no.	Module 6	Marks
--------------	-----------------	--------------

6.a	What is the function of surge tank?	4
------------	-------------------------------------	----------

Answer b or c

- | | | |
|----------|--|----------|
| b | Enumerate the maintenance of civil and electrical engineering works. | 8 |
| c | Discuss the computer aided power system analysis (CAPSA) is helpful for hydro power systems. | 8 |