

Name:	
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2019

Course: Advance manufacturing process

Program: B tech ADE

Course Code: ADEG 371

No of pages : 3

Instructions:

Semester: VI

Time 03 hrs.

Max. Marks: 100

SECTION A

S. No.	Question	Marks	CO
Q 1	'A dielectric is used in EDM whereas an electrolyte is used in ECM'. Justify	5	CO 1
Q 2	Draw the different types of concentrators used in USM.	5	CO 3
Q 3	Enlist some basic reasons for developing nontraditional machining processes.	5	CO 1
Q 4	What are the advantages of using electron beam welding over arc welding?	5	CO 3

SECTION B

Q 5	Describe how frequency and amplitude of vibration and abrasive diameter affect the MMR in USM.	10	CO 3
Q 6	Write a brief note on dynamics of abrasive flow in Abrasive Water Jet machining process.	10	CO 4
Q 7	Explain High Energy Rate Forming in brief and describe the equipment set up required for HERF?	10	CO 3
Q 8	<p>Explain the principle of LASERS following with the description of Laser Processing with example.</p> <p style="text-align: center;">OR</p> <p>Explain with a neat sketch the geometry of a drilled hole obtained during LBM.</p>	10	CO 3

SECTION-C			
Q 9	Draw the basic electrical waveform and describe spark initiation and material removal mechanism in travelling wire EDM process. Also explain its wire feed mechanism and wire drive system with suitable sketches.	20	CO2
Q 10	<p>Discuss the importance of Thermal Processes. Enlist them. Highlight the best application area of these processes? Explain the use of PAM during cutting operation with a neat sketch.</p> <p style="text-align: center;">OR</p> <p>Find the flow rate that will result from applying 60,000Psi to an 0.008' diameter nozzle. What size pump motor will be required? (use the pressure flow chart given below). Also discuss on the pumping mechanism and its selection parameters in WJM process with a neat sketch.</p>	20	CO 4

PRESSURE-FLOW RELATIONSHIPS
FLOW RATE ASSUMES 1.0 ORIFICE COEFFICIENT

