

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI (NEW) - EXAMINATION – SUMMER 2017****Subject Code: 2163906****Date: 10/05/2017****Subject Name: Nanomagnetism and NanoFluids****Time: 10:30 AM to 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		MARKS
<b>Q.1</b>	<b>Short Questions</b>	<b>14</b>
	1 Define ferromagnetism	
	2 Define Fluid	
	3 Give the example of ferrofluid	
	4 Define paramagnetic materials	
	5 Which material is perfect diamagnetic	
	6 Define nano fluid	
	7 What is stability time for nano fluid	
	8 Give the example of nano magnets	
	9 Write two application of fluid	
	10 Write advance application of nano fluid	
	11 Write unit of magnetic flux	
	12 Write full for of SSR method	
	13 Give the name of two bottom up technique to synthesis nano materials.	
	14 What is step one method?	
<b>Q.2</b>	(a) Describe Ferromagnetic materials.	<b>03</b>
	(b) Explain Bohr magnetron.	<b>04</b>
	(c) Explain nano magnetic materials in detail.	<b>07</b>
	<b>OR</b>	
	(c) Write a note on ferrofluid.	<b>07</b>
<b>Q.3</b>	(a) Write note on diamagnetic materias	<b>03</b>
	(b) Write a note on temperature effect on magnetic materials	<b>04</b>
	(c) Explain B-H curve of nano magnets.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) What is paramagnetic material explain it.	<b>03</b>
	(b) Write a short note on properties of nano magnets.	<b>04</b>
	(c) Explain B-H curve of magnetic materials.	<b>07</b>
<b>Q.4</b>	(a) What is step one technique to prepare nano fluid? Explain it.	<b>03</b>
	(b) Describe sol- gel technique to prepare nano magnet	<b>04</b>
	(c) Write a note on temperature effect on magnetic materials	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) What is step two technique to prepare nano fluid.	<b>03</b>
	(b) Explain Solid state reaction for nano magnet.	<b>04</b>
	(c) Write a note on temperature effect on nano magnet	<b>07</b>
<b>Q.5</b>	(a) Write recent application of nano magnet.	<b>03</b>
	(b) Explain antiferromagnetic materials.	<b>04</b>
	(c) Write the Stability evaluation methods for nanofluids	<b>07</b>
	<b>OR</b>	

- Q.5** (a) Write recent application of nano fluid. **03**  
(b) Explain antiferrimagnetic materials. **04**  
(c) Explain stability enhancement procedures **07**

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