M.Sc.(Physics) (NEP Pattern) - Semester-III

03MSCPH4.1 - Major Elective-I Paper-IV : Ultrasonic and its Applications

P. Pages : 2 **GUG/W/24/16026**

Time : Two Hours * 7 3 3 0 * Max. Marks : 40

Either:

1. a) Explain production of ultrasonic waves using magnetostriction method. **4**

b) Discuss Kundt's method. **4**

OR

e) Explain longitudinal, traverse, surface and lamb waves. **4**

f) Explain Acoustic grating. **4**

Either:

2. a) Discuss piezoelectric transducers. **4**

b) Write the characteristics of ultrasonic waves. **4**

OR

e) Discuss electromagnetic transducers. **4**

f) Explain refection and transmission of ultrasonic waves. **4**

Either:

3. a) Explain propagation of ultrasonic waves in materials. **4**

b) Discuss interferometer technique in ultrasonic. **4**

OR

e) Discuss absorption and attenuation in solids. **4**

f) Discuss pulse echo overlap technique. **4**

Either:

4. a) Explain low intensity methods for characterizing structure and interaction. **4**

b) Write applications of ultrasonics in various disciplines. **4**

OR

e) Explain emulsification and cleaning. **4**

f) Discuss ultrasonic propagation in pure liquids. **4**

5. Answer all the followings.

a) Explain in short acoustic grating. **2**

b) What is ultrasonic transducer. **2**

c) Discuss sing around technique in short. **2**

d) Explain cavitations. **2**

****