Student Seat No._____

GANPAT UNIVERSITY

B.Tech Sem. VIth Biomedical & Instrumentation Engineering

Regular Examination May 2014

2BM603: Diagnostic Techniques & Instrumentation

Time: 3 Hours **Total Marks-70**

Instructions:-

1. All the questions are compulsory.
2. Answer of each section must be written in separate answer books.
3. Figure to the right indicate marks.
4. Assume data, if needed.
5. Conventional terms / notations are used.

SECTION-I

Q-1			(12)
	1	Which measurement is more accurate/appropriate in patients with COPD; spirometry or peak flow?	4
	2	What do the different parameters within spirometry testing mean?	4
	3	Explain in detail Nitrogen washout technique.	4
		OR	
Q-1			(12)
	1	Write short note on N2 analyzers.	6
	2	What are the physiological parameters adaptable to biotelemetry? Explain each of them in detail.	6
Q-2			(11)
	1	What is air conduction and bone conduction?	4
	2	Give the difference between FEV1 and FEV3.	3
	3	What are the advantages and disadvantages of implantable telemetry system?	4
		OR	
Q-2			(11)
	1	Explain pressure differential pneumotachometer.	5
	2	Write short note on opthalmoscope.	6
Q-3			(12)
	1	Describe the blood pressure and PWM telemetry system	6
	2	Write short note on Infrared gas analysers.	6

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SECTION-II

Q-4 (12)

1 Explain different pulse rate measurement techniques. 6

2 Explain Modified Fick technique. 6

OR

Q-4 (12)

1 Explain Laser Doppler blood flow meter. 6

2 Explain dye dilution technique and compare it with thermo dilution method. 6

Q-5 (11)

1 Explain tocodynamometer with neat diagram and explain how it is better than invasive method. 5

2 Explain different Displacement Plethysmographies for volume change measurement in limb. 6

OR

Q-5 (11)

1 Explain Doppler ultrasound method for Fetal heart rate measurement method. 5

2 Explain physiological effects of currents with different magnitudes with comparison diagram. 6

Q-6 (12)

1 Give difference between NMR flow meter and electromagnetic flow meter. 4

2 Explain GFCI with neat diagram. 4

3 Explain arrhythmia detection. 4

----------END OF PAPER----------

BEST OF LUCK