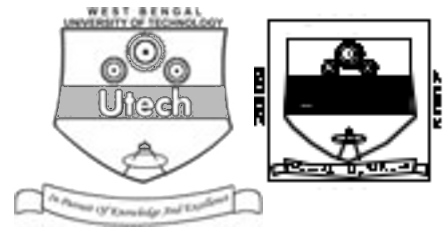


# HOSPITAL ENGINEERING & INFORMATION SYSTEM ( SEMESTER - 6 )

**CS/B.Tech (BME)/SEM-6/BME-604/09**



1. ....  
Signature of Invigilator

2. ....  
Signature of the Officer-in-Charge

**Reg. No.**

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**Roll No. of the Candidate**

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**CS/B.Tech (BME)/SEM-6/BME-604/09**

**ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE – 2009**

**HOSPITAL ENGINEERING & INFORMATION SYSTEM ( SEMESTER - 6 )**

Time : 3 Hours ]

[ Full Marks : 70

**INSTRUCTIONS TO THE CANDIDATES :**

1. This Booklet is a Question-cum-Answer Booklet. The Booklet consists of **32 pages**. The questions of this concerned subject commence from Page No. 3.
2. a) In **Group – A**, Questions are of Multiple Choice type. You have to write the correct choice in the box provided **against each question**.  
b) For **Groups – B & C** you have to answer the questions in the space provided marked 'Answer Sheet'. Questions of **Group – B** are Short answer type. Questions of **Group – C** are Long answer type. Write on both sides of the paper.
3. **Fill in your Roll No. in the box** provided as in your Admit Card before answering the questions.
4. Read the instructions given inside carefully before answering.
5. You should not forget to write the corresponding question numbers while answering.
6. Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.
7. **Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall.**
8. You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, **which will lead to disqualification**.
9. Rough work, if necessary is to be done in this booklet only and cross it through.

**No additional sheets are to be used and no loose paper will be provided**

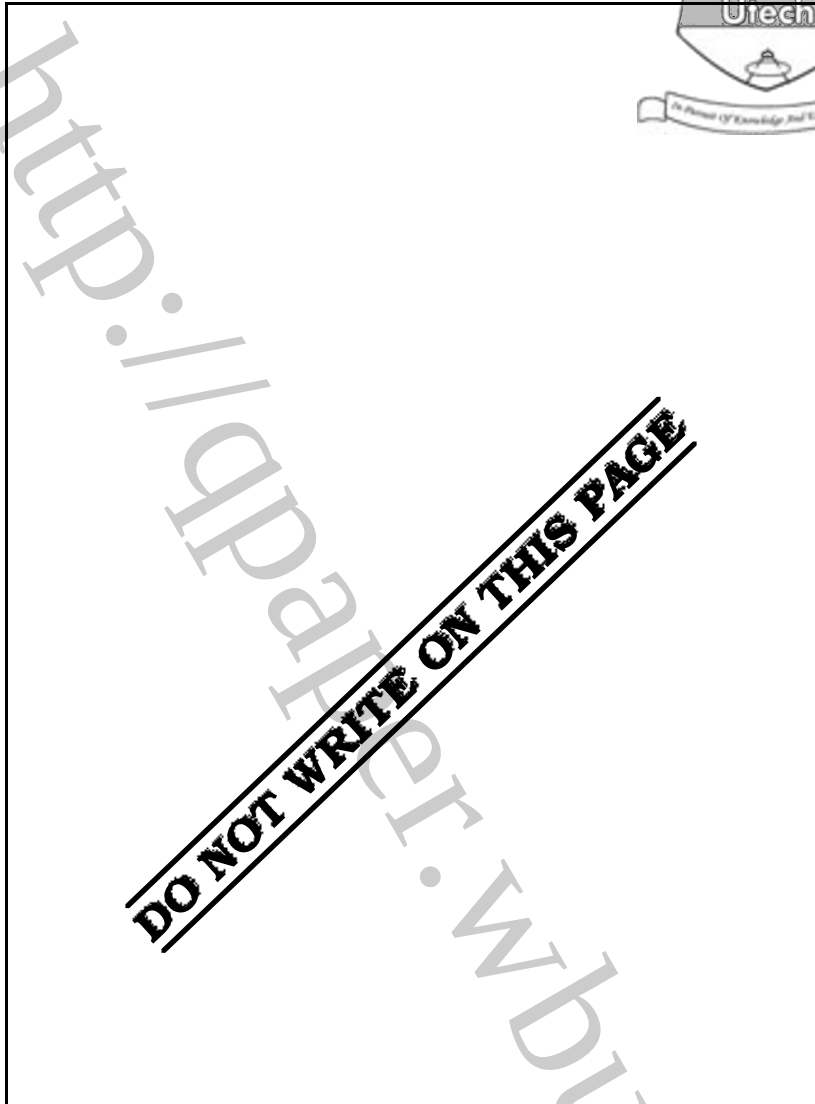
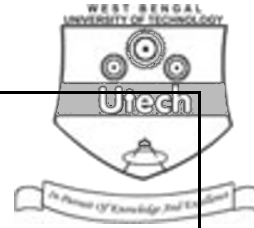
**FOR OFFICE USE / EVALUATION ONLY**

Marks Obtained

Question Number	Group – A					Group – B					Group – C					Total Marks	Examiner's Signature
<b>Marks Obtained</b>																	

.....  
**Head-Examiner/Co-Ordinator/Scrutineer**

**6867 ( 15/06 )**





**ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE - 2009**  
**HOSPITAL ENGINEERING & INFORMATION SYSTEM**  
**SEMESTER - 6**



Time : 3 Hours ]

[ Full Marks : 70

**GROUP - A**

**( Multiple Choice Type Questions )**

1. Choose the correct alternatives for the following : 10 ∞ 1 = 10

i) The relative humidity in operating room is

- |           |            |
|-----------|------------|
| a) 60-70% | b) 50-60%  |
| c) 80-90% | d) 70-80%. |

ii) Air condition is not a must in

- |                           |             |
|---------------------------|-------------|
| a) operating room         | b) morgue   |
| c) labour delivery suites | d) autopsy. |

iii) Which equipment is not present in radiology department ?

- |                       |                   |
|-----------------------|-------------------|
| a) Ultrasound machine | b) MRI            |
| c) CT scanner         | d) X-ray machine. |

iv) Intensive care unit is a kind of

- |                                    |
|------------------------------------|
| a) line services of hospital       |
| b) auxiliary services of hospital  |
| c) supportive services of hospital |
| d) none of these.                  |



v) Sophisticated medical equipment are sensitive to

- a) heat and pressure
- b) heat and humidity
- c) temperature and humidity
- d) temperature and pressure.



vi) Incineration is a type of

- a) high temperature dry oxidation health care waste disposal process
- b) chemical disinfection process
- c) land disposal of health care waste
- d) microwave irradiation of infectious waste.

vii) The objective of a tender for purchase of equipment is to

- a) invite competitive bids
- b) invite technical bids
- c) invite commercial bids
- d) invite specifications of units.

viii) Microshock is a low value current in the range of

- a) 1 to 100 Amps
- b) 10 to 30 mA
- c) 50 to 100 Amps
- d) 1 to 5 Amps.

ix) A 'Transient' in electrical power supply causes

- a) sudden oscillation
- b) sudden increase in voltage
- c) sudden increase in current
- d) sudden heating.

x) CSSD means

- a) Central Supply and Service Department
- b) Central Sterile Supply Department
- c) Critical Sterile and Supply Department
- d) Central Supportive Supply Department.



5

**GROUP – B**

**( Short Answer Type Questions )**

Answer any *three* of the following.



3 ∞ 5 = 15

2. Describe the jobs and responsibilities of a biomedical engineer in a hospital.
3. What are the cryogenic system ? Why would you require them in hospital ?
4. Briefly explain about the fire-fighting equipment used in hospitals.
5. Give a brief outline of waste disposal, sterilization of surgical tools.
6. What is the importance of ISO certificate in a hospital ? What are the proposed protocols for ISO certification ?
7. Define a hospital. Classify hospital on the basis of objective, ownership and size.

**GROUP – C**

**( Long Answer Type Questions )**

Answer any *three* of the following.

3 ∞ 15 = 45

8. What do you mean by centralized medical gas supply station ? What are the advantages of centralized medical gas supply ? Write the use of oxygen, nitrous oxide, vacuum (suction). Briefly describe supply source, distribution system and safety precautions for gas handling. 1 + 2 + 3 + ( 4 + 3 + 2 )
9. Write the basic requirements to design the 'Intensive Care Unit' (ICU) of a modern hospital. What are the purposes of setting up an ICU in hospital ? 12 + 3
10. What are the factors to be considered before set-up of a new hospital ? What are the declarations of Alma-Ata ( 1978 ) Medical Conference ? 10 + 5



11. Name the types of MRO's. Mention the advantages and disadvantages of commercial MRO's. Mention the criteria for selection of commercial MRO. 5 + 6 + 4
12. What are the effects of EMI on Biomedical Equipment ? Mention the preventive measures taken to eliminate EMI. Name the areas in a hospital where EMI filters are absolutely necessary. 5 + 5 + 5

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END