

JK LAKSHMIPAT UNIVERSITY, JAIPUR

INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination (Regular/ Backlog), April-May 2018

M. Tech. in Thermal Engineering, Semester II

Roll No.....

COURSE CODE: TEMTECH 224

Time: 3 hours

Max. Marks: 100

COURSE TITLE: Thermal Environmental
Engineering

Instructions to students:

1. Do not write anything other than your roll number on question paper.
 2. Assume suitable data wherever required and mention it clearly.
 3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics/ flow chart wherever, required are an integral part of the answer.
-

Q.1A Objective type multiple choice questions (10 questions @ 1 mark)

10

i Thermal comfort conditions is dependent upon

- a. Building
- b. Surrounding
- c. Air
- d. Occupant

ii Health is a state of complete:

- a. Physical
- b. Environmental
- c. Water
- d. disease

iii Indoor air quality standards are

- a. Same for all type of occupants
- b. Different with different occupants
- c. Only valid for human beings
- d. None of the above

iv Adverse effect of pollution can be

- a. Watering in eyes
- b. Stinging in eyes
- c. Cardio pulmonary problems
- d. All of the above

v Airborne contaminants are:

- a. Particulate matters
- b. Gases
- c. Pollens
- d. All of the above

vi OSHA permissible limit of grain dust is

- a. 5 mg/m³
- b. 10 mg/m³
- c. 15 mg/m³

- d. None of the above
- vii Source of Bio aerosols are
 - a. Building surface
 - b. Building material
 - c. Building water system
 - d. All of the above
- viii Gaseous contaminants are
 - a. VOC
 - b. CO
 - c. CO₂
 - d. All of the above
- ix Maximum permissible limit of CO₂ according to OSHA is
 - a. 15000 ppm
 - b. 10000 ppm
 - c. 5000 ppm
 - d. 2500 ppm
- x Maximum permissible limit of Ozone according to OSHA is
 - a. 5 ppm
 - b. 2 ppm
 - c. 0.1 ppm
 - d. None of the above

Q.2	Short answer type questions (4 questions @ 2.5 marks)	10
i.	What is Hazard and how it is recognized?	
ii.	Describe various types of airborne contaminants.	
iii.	What are various exposure sources of industrial environment?	
iv.	Which are major contaminants of indoor air?	
Q.3A	Describe Bio aerosols.	05
Q.3B	How bio aerosols can be controlled?	05
Q.4A	Are refrigerants a gaseous pollutants and which is the source other than refrigeration system?	05
Q.4B	What is Sick Building Syndrome? How it is eliminated?	05
Q.5A	How the physical factors affect the indoor environment and what are these?	05
Q.5B	Vibration is identified as one of the sources of pollution. How?	05
Q.6A	There were many petitions against mobile towers in populated area. Why?	05
Q.6B	Describe the classes of Air contaminants.	05
	OR	
Q.6B	Particulate matter is one of the health hazard. How they are classified?	05
Q.7A	P ₂₅ is a particulate contaminant. How?	05
Q.7B	How air borne particles are measured?	05
	OR	
Q.7B	What are the major categories of gaseous air contaminants?	05

- | | | |
|------|---|----|
| Q.8 | Describe in detail harmful effects of gaseous contaminants. | 15 |
| Q.9A | What are the sources of Radons? | 5 |
| Q.9B | Describe gaseous sample collection techniques? | 10 |
| | OR | |
| Q.9B | Describe all types of non-industrial contaminants | 10 |