

JK LAKSHMIPAT UNIVERSITY, JAIPUR

INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination (Regular/Backlog), Nov-Dec 2017

B. Tech in Chemical Engineering, Semester VII

Roll No.....

COURSE CODE: 702 CHE

Time: 3 hours

Max. Marks: 100

COURSE TITLE: Process Utilities and Industrial
Safety

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

- i. For household wiring and small units, the following should be used for safety measure
 - a- MCB
 - b- ACB
 - c- OCB
 - d- MCCB
- ii. Water has unique properties because
 - a- has no substitute
 - b- chemically impure
 - c- it is available in large amount
 - d- none
- iii. Safety valve play role important in industrial safety
 - a- device to reduce the excess pressure
 - b- It is the thickest component in the system
 - c- Set pressure and Capacity
 - d- All of the above
- iv. Desuperheaters is
 - a- heat transfer or industrial process purposes
 - b- a device that lowers the temperature of superheated steam
 - c- it can be used effectively for heating
 - d- all of the above
- v. Airborne contaminants is
 - a- dust particles
 - b- fumes
 - c- vapors
 - d- all of the above
- vi. Hazard is
 - a- Harm or damage
 - b- a source of potential harm
 - c- handling of toxic effect
 - d- all of above
- vii. Risk Assessment is
 - a- industrial process
 - b- industrial process to calculate risk for hazard
 - c- industrial technology
 - d- none
- viii. HAZOP is
 - a- hazard and operability study
 - b- Hazard and operation study
 - c- Both a & b
 - d- none

- ix. Probability of the event that might occur severity of the event if it occurs
 - a- Accident
 - b-Hazard
 - c- Risk
 - d- None of the above
 - x. Check list for Job Safety Analysis (JSA) consists of
 - a- Work area, material, machine, tools
 - b- Men, machine, material, tools
 - c- Men, machine, work area, tools
 - d- Men, work area. Material, tools
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- Q.2 Short answer type questions (4 questions @ 2.5 marks) 10
- 1 Write note on physical parameter for water for industrial uses
 - 2 Give short note on air compressor
 - 3 Safety valves
 4. Note on Hazards due to fire.
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- Q.3A Discuss the various desuperheaters use in industry process. 05
- Q.3B Give note on hardness of water and give various salt responsible for hardness and their impacts. 05
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- Q.4A Discuss the risk assessment for fire materials in industrial safety 05
- Q.4B Discuss the major factor which influence the toxicity at work place 05
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- Q.5A Explain how monitoring useful for all chemical production industries. 05
- Q.5B Write short note on indian standards on personal protective equipment 05
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- Q.6A Explain the threshold limit value (TLVs) for hazards substance. 05
- Q.6B Discuss the on-site emergency plan for IOCL plant in jaipur 05
- OR
- Q.6B Give note on personal protective equipment for eyes 05
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- Q.7A Discuss the various type of monitoring in work place . 05
- Q.7B Give physical classification of airborne contaminants . 05
- OR
- Q.7B Write critical case study of piper alpha 05
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- Q.8A Give general assessment process flow diagram of hazard identification 10
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- Q.9A Give risk assessment process with taking the example of acid production plant. 10
- Q.9B Explain the HAZOP technique for production of ammonium phosphate. 10
- OR
- Q.9B the risk assessment basic steps for identification of hazardous substances and apply this process for the urea production chemical plant 10