School of Aeronautics (Neemrana)
APPROVED BY DIRECTOR GENERAL OF CIVIL AVIATION, MINISTRY OF CIVIL AVIATION, GOVT. OF INDIA
APPROVED BY ALL INDIA COUNCIL FOR TECHNICAL EDUCATION & AFFILIATED TO RAJASTHAN TECHNICAL UNIVERSITY, KOTA & BIKANER TECHNICAL UNIVERSITY, BIKANER, RUN & MANAGED BY L N VERMA MEMORIAL SOCIETY

School of Aeronautics
APPROVED BY DIRECTOR GENERAL OF CIVIL AVIATION, MINISTRY OF CIVIL AVIATION, GOVT. OF INDIA
RUN AND MANAGED BY LAXMI NARAIN VERMA MEMORIAL SOCIETY, REGISTERED, DELHI ADMINISTRATION, UNDER SOCIETIES REGISTRATION ACT XXI OF 1860.

Question Paper For Internal Assessment Examination (Theory) - Credit 4 / 12 /

Question Paper For Internal Assessment Examination (Theory) - Credit 4

- **Instructions For Students / Faculty**
  Mid Term I (Total 80 Marks, 2 HRS. Syllabus From Beginning Of Session)
  - Part A: Total number of questions to be given are ten, each carrying 2 marks and are compulsory to attend. There is no choice. They are short answer type questions (**Not More Than 25 Words For both Question & Answer)**, no objective type or fill in the blanks. Total 20 marks.
  - Part B: Total number of questions to be given are six, out of which student has to answer any four. They are long answer type (**Not More Than 50 Words For Question)**, each carrying 6 marks. Total 24 marks.
  - Part C: Total number of questions to be given are four, out of which student has to answer any three. They are numerical answer type / fully elaborative type (**Not More Than 70 Words For Question)***, each carrying 12 marks. Total 36 marks.

  Mid Term II & III (Total 120 Marks, 2.5 HRS. Syllabus From Beginning Of Session)
  - Part A: Total number of questions to be given are ten, each carrying 2 marks and are compulsory to attend. There is no choice. They are short answer type questions (**Not More Than 25 Words For both Question & Answer)**, no objective type or fill in the blanks. Total 20 marks.
  - Part B: Total number of questions to be given are seven, out of which student has to answer any five. They are long answer type (**Not More Than 50 Words For Question)**, each carrying 8 marks. Total 40 marks.
  - Part C: Total number of questions to be given are five, out of which student has to answer any four. They are numerical answer type / fully elaborative type (**Not More Than 70 Words For Question)***, each carrying 15 marks. Total 60 marks.

*** LIST OF ELABORATIVE THEORY QUESTION SUBJECTS**: NO SUBJECT UNDER CREDIT FOUR

FACULTY MEMBERS, PLEASE ENSURE EXCEPT ABOVE LISTED SUBJECTS, NO THEORITICALELABORATIVE QUESTION SHOULD BE GIVEN IN PART 'C' OF QUESTION PAPER

STUDENT IS ALLOWED TO ENTER LATE NOT MORE THAN 15 MIN AFTER STARTING OF EXAM, AND MAY LEAVE THE EXAM HALL ON EXPIRY OF ATLEAST OF 1 Hr FROM THE STARTING TIME OF EXAMINATION.

Question Paper & Student Details

Type of Exam	Mid Term 2	**Date of Submission**	16/11/2020
Name of Faculty	Ms. Vijay Laxmi Verma	**Date of Examination**	26/11/2020
Course	B.Tech (Aeronautical Engineering)	**Semester**	SEMESTER : 1
Batch	Twentieth (20)	**Subject**	1 FY2 - 03 Engineering Chemistry (Cr 4)

COURSE OUTCOMES FOR REFERENCE TO FRAME QUESTION PAPER
(Faculties are required to mention relevant Course Outcome number against the respective question in QP)

Course Outcome	1. Explanation of role of gypsum in setting/ hardening of cement 2. Understanding the term lubrication and lubricants and function 3. Understanding of corrosion mechanism and its method of prevention 4. Explanation of organic reactions 5. Differentiating hardness problem in case of hard water and Explanation of cause of scale formation 6. Illustrating the calculation of viscosity index and Explanation of viscometer construction and working 7. Understanding of the term nucleophile and electrophile 8. Explanation of chemical reaction nature of glass and Enhancing knowledge related to composition and manufacturing of glass 9. Enhancing knowledge related to semi – solid lubricants		
Email I'd	vijaylaxmi@soaneemrana.org	**Phone No.**	931-120-9015
Student Name		**Student Reg No.**	
Part A			
Question : 1	write difference between cold lime soda process and hot lime soda process?		
5	water	N.K.Engg Chem	5
Question : 2	what are the salts responsible for formation of scale?		
4	water	N.K.Engg Chem	9
Question : 3	what is caustic embrittlement ?		
5	water	N.K.Engg Chem	5
Question : 4	How corrosion can be prevented by protective coating? give example		
12	Corrosion	N.K.Engg Chem	3
Question : 5	what is pitting corrosion?		
11	Corrosion	N.K.Engg Chem	3
Question : 6	Give any two physical properties of cement		
14	Cement	N.K.Engg Chem	1
Question : 7	What is extreme pressure lubrication ?		
18	Lubricants	N.K.Engg Chem	2
Question : 8	Write any two differences between SN^1 and SN^2 reactions ?		

24	Organic Reactions	N.K.Engg Chem	4
Question : 9	What are Electrophiles and Nucleophile? give example		
25	Organic Reactions	N.K.Engg Chem	7
Question : 10	Differentiate between scale and sludge		
5	water	N.K.Engg Chem	5
Part B			
Question : 1	a. Write difference between Dry process and wet process of manufacturing of cement. Which is better? b. What do you mean by calcareous materials?		
16	Cement	N.K.Engg Chem	1
Question : 2	Explain role of gypsum in setting and hardening of cement, with relevant chemical reactions ?		
14	Cement	N.K.Engg Chem	1
Question : 3	What is glass chemically? Explain its properties of glass?		
18	Glass	N.K.Engg Chem	8
Question : 4	Define lubricants and lubrications and write their main functions ?		
21	Lubricants	N.K.Engg Chem	2
Question : 5	Explain mechanism of SN^1 organic reactions ?		
24	Organic Reactions	N.K.Engg Chem	4
Question : 6	What do you understand by semi- solid lubricants or greases . Explain any two types of greases ?		
22	Lubricants	N.K.Engg Chem	9
Question : 7	Explain how glass is manufacture of tank furnace process. Draw labeled diagram ?		
19	Engg Material(Glass)	N.K.Engg Chem	8
Part C			
Question : 1	Explain thin film lubrication or boundary lubrication. Which lubricants are preferred in this?		
21	Lubricants	N.K.Engg Chem	2
Question : 2	Describe Construction and working of red wood viscometer No.1 with labeled diagram ?		
23	Lubricants	N.K.Engg Chem	8

Question : 3	Explain softening of hard water by ion exchange process with proper labeled diagram and chemical?		
10	WATER	N.K.Engg Chem	5
Question : 4	A sample of water on analysis has been found to contain following impurities: $Mg(HCO_3)_2$ = 14.6 mg/L $MgCl_2$ = 19 mg/L $Mg(NO_3)_2$ = 26.6 mg/L $MgSo_4$= 36.0 mg/L Nacl = 29 mg/L $CaCo_3$ = 10 mg/L Calculate permanent and temporary hardness in water		
10	Water	N.K.Engg Chem	5
Question : 5	a. Explain how viscosity index of lubrication oil is determined b. An oil sample under test has viscosity same as that of gulf oil or Naphthenic oil (Low VI standard) and paraffinic oil (high VI standard) at 210˚F or 99˚C but viscosity at 100˚F or 38˚C oil under test = 61secs oil (low VI)= 758secs oil (high VI) = 420secs. calculate VI of oil under test.		
23	Viscosity	N.K.Engg Chem	6
Upload Scanned Document In Case of Numerical or Diagram For Any of The Above Questions. *(Mention question number with relevant fig / numerical / equations. Max 150 KB)*			
I have scrutinized the question paper. There is no spelling mistake or any type of irrelevant question.	Yes		

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