Question Paper For Internal Assessment Examination (Theory) - Credit 4 / 23 /

Instructions for Students/FacultyMid Term I (Total 80 Marks, 2 HRS. Syllabus from Unit-1)

- Part A: Total number of questions to be given are ten (5 from CO1 and 5 from CO2), 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 (3 from CO1 and 3 from CO2), out of which student must answer four (2 from CO1 and 2 from CO2). They are long answer type (**Not More Than 50 Words for Question)**, each carrying 5 marks. Total 20 marks.
- Part C: Total number of questions to be given are six (3 from CO1 and 3 from CO2), out of which student must answer four (2 from CO1 and 2 from CO2). They are numerical answer type / fully elaborative type (**Not More Than 70 Words for Question)** *, each carrying 10 marks. Total 40 marks.

Mid Term II (Total 120 Marks, 2.5 HRS., Syllabus from Unit-2)

- Part A: Total number of questions to be given are ten (5 from CO3 and 5 from CO4), each carrying 4 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 40 marks.
- Part B: Total number of questions to be given are six (3 from CO3 and 3 from CO4), out of which student has to answer four (2 from CO3 and 2 from CO4). They are long answer type (**Not More Than 50 Words for Question)**, each carrying 7 marks. Total 28 marks.
- Part C: Total number of questions to be given are six (3 from CO3 and 3 from CO4), out of which student has to answer four (2 from CO3 and 2 from CO4). They are numerical answer type / fully elaborative type (**Not More Than 70 Words For Question)** *, each carrying 13 marks. Total 52 marks.

Mid Term III (Total 120 Marks, 2.5 HRS., Syllabus from Unit-3)

- Part A: Total number of questions to be given are ten (5 from CO5 and 5 from CO6), each carrying 4 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 40 marks.
- Part B: Total number of questions to be given are six (3 from CO5 and 3 from CO6), out of which student must answer four (2 from CO5 and 2 from CO6). They are long answer type (**Not More Than 50 Words for Question)**, each carrying 7 marks. Total 28 marks.
- Part C: Total number of questions to be given are six (3 from CO5 and 3 from CO6), out of which student must answer four (2 from CO5 and 2 from CO6). They are numerical answer type / fully elaborative type (**Not More Than 70 Words for Question)** *, each carrying 13 marks. Total 52 marks.

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

Instructions For Faculties:

There should be total 6 Course Outcomes (COs) for each subject.

- Mid Term Question Papers are to be submitted as per Course Outcomes (COs) which should be divided equally in Part A, Part B and Part C according to Mid Term Examination and Credit Point.
- In Mid Term-1, the questions are to be given from CO1 and CO2. In Mid Term-2, the questions are to be given from CO3 and CO4. Similarly, in Mid Term-3, the questions are to be given from CO5 and CO6.

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

INSTRUCTION FOR STUDENTS

- **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 AND STUDENTS DETAILS

Type of Exam	Mid Term 3	**Date of Submission**	26/12/2020
Name of Faculty	Ms. Vijay Laxmi	**Date of Examination**	29/12/2020
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. Discussion of Origin and Fractional distillation of petroleum and its products. 2. Discussion of different varieties of coal and its composition 3. Discussion of carbonisation of coal and determination of calorific value. 4.Calculation of different products formed due to combustion of coal. 5. Discussion of calorific value of gaseous fuel. 6. Explanation of reforming cracking and quality of petrol and diesel in terms of octane number and cetane number		
Email I'd	vijaylaxmi@soaneemrana.org	**Phone No.**	931-120-9015
Student Name		**Student Reg No.**	

Part A

All the questions are compulsory to attend.

1. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.			5
Question : 1	What are the theories of Origin of petroleum & explain		
35	Organic Fuel	N.K.Engg Chemistry	
Question : 2	What is cracking in petroleum ? Give reactions		
36	Organic Fuel	N.K.Engg Chemistry	
Question : 3	Define Fractional distillation of petroleum ? Write the names of the products obtain in fractional distillation?		
35	Organic Fuel	N.K.Engg Chemistry	

Question : 4	What are the importance of anti-knocking agents with examples?		
36	Organic Fuel	N.K.Engg Chemistry	
Question : 5	How coal is classified? What is fuel and write different types of fuel ? Give Example ?		
31	Organic Fuel	N.K.Engg Chemistry	
2. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.			6
Question : 6	How anthracite is different from bituminous coal? Write composition of Anthracite coal?		
31	Organic Fuel	N.K.Engg Chemistry	
Question : 7	Describe peat coal and lignite coal? Write in details , how Bituminous coal is superior than lignite		
31	Organic Fuel	N.K.Engg Chemistry	
Question : 8	What do you mean by coalification of coal?		
33	Organic Fuel	N.K.Engg Chemistry	
Question : 9	What is proximate analysis of coal and explain it importance of proximate analysis of coal?		
32	Organic Fuel	N.K.Engg Chemistry	
Question : 10	What is ultimate analysis of coal and explain it importance of ultimate analysis of coal?		
33	Organic Fuel	N.K.Engg Chemistry	

Part B

FOR MIDTERM 1 - Part B: Total number of questions to be given are six (3 from CO1 and 3 from CO2), out of which student must answer four (2 from CO1 and 2 from CO2).
FOR MIDTERM 2 - Part B: Total number of questions to be given are six (3 from CO3 and 3 from CO4), out of which student must answer four (2 from CO3 and 2 from CO4).
FOR MIDTERM 3 - Part B: Total number of questions to be given are six (3 from CO5 and 3 from CO6), out of which student has to answer four (2 from CO5 and 2 from CO6).

3. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.			5
Question : 1	What is Carbonization of coal? Differentiate between High temperature and low temperature carbonization of coal ?		
34	Organic Fuel	N.K.Engg Chemistry	
Question : 2	What is the Principle of Bomb Calorimeter ?Draw the structure of Bomb Calorimeter and Label it?		
33	Organic Fuel	N.K.Engg Chemistry	
Question : 3	Explain the beehive method of carbonization of coal?		
36	Organic Fuel	N.K.Engg Chemistry	

4. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.			6
Question : 4	a. A gas used in an internal combustion engine had, 40% of H_2 ,30% of CH_4 , 17 % of Co , 5% of N_2, 3% of C_2H_8 , 5% of C_2H_2. Find the volume of air needed for combustion of gas. If air supplies 45% excess , find the volume analysis of dry products. b. How the calculation is done for HCV and LCV ?		
40	Organic Fuel	N.K.Engg Chemistry	
Question : 5	What are the advantages of catalytic cracking ? Explain mechanism of catalytic cracking reactions		
37	Organic Fuel	N.K.Engg Chemistry	
Question : 6	Explain the working of Bergius process ? Draw labelled diagram of Bergius process		
38	Organic Fuel	N.K.Engg Chemistry	
Question : 7 (Old Pattern)			

Part C

FOR MIDTERM 1 - Part C: Total number of questions to be given are six (3 from CO1 and 3 from CO2), out of which student must answer four (2 from CO1 and 2 from CO2).
FOR MIDTERM 2 - Part C: Total number of questions to be given are six (3 from CO3 and 3 from CO4), out of which student must answer four (2 from CO3 and 2 from CO4).
FOR MIDTERM 3 - Part C: Total number of questions to be given are six (3 from CO5 and 3 from CO6), out of which student has to answer four (2 from CO5 and 2 from CO6).

5. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.			5
Question : 1	a. Explain the construction and working of Junker calorimeter with neat label diagram ? b. b.A gaseous fuel was burn in Junker's calorimeter to find out HCV and LCV Following data obtained Vol. of gaseous fuel burnt in certain time = 0.1mt cube Vol. of water collected in certain time =20kg Vol. of steam collected in certain time =0.020 kg Temp. of inlet =30 degree c Temp. of outlet =30°C		
39	Organic Fuel	N.K.Engg Chemistry	
Question : 2	Numerical problem- find the attachment		
38	Organic Fuel	N.K.Engg Chemistry	
Question : 3	a. Explain about the manufacture of coal gas with neat labelled diagram ? b. A coal sample on an analysis having a following by weight C= 85%, O= 2.5% , N= 1.0 % ; ash = 3.0 %. Calculate minimum amount air by weight required for complete combustion of 2.5 kg of coal.		
40	Organic Fuel	N.K.Engg Chemistry	

6. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.			6
Question : 4	a. What do you understand by catalytic reforming of straight run gasoline ? Explain the moving bed catalytic reforming with labelled diagram ? b. Sample of coal containing C=75%, HYDROGEN (H) =8%, OXYGEN (O) =7.5%, S=5.0% and rest is ash. Now calculate the gross and net calorific value of coal.		
37	Organic Fuel	N.K.Engg Chemistry	
Question : 5	What do you understand of Octane number & Cetane number of petrol and diesel respectively ? Difference between octane number and Cetane Number?		
39	Organic Fuel	N.K.Engg Chemistry	
Question : 6	What do you understand by cracking of gasoline ? Explain its methods of cracking of gasoline ?		
35	Organic Fuel	N.K.Engg Chemistry	
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)*	https://form.123formbuilder.com/upload_dld.php?fileid=eb55ce66d3fb8d343bc7703c937b9096		
I have scrutinized the question paper. There is no spelling mistake or any type of irrelevant question.			

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School of Aeronautics (Neemrana)

Numerical Sheet for Part C of New Scheme and Part B of Old Scheme

Question Paper - Credit 1/2/3/4 and 2012 Scheme

Instructions For Students / Faculty
Mid Term I (Total 80 Marks, 2 hrs.)

- 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.)

- 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**: Communication Skills, Human Values, Technical Communication, Managerial Economics and Financial, Aircraft Materials and Processes, Aircraft Systems, Aircraft Maintenance Practices, Avionics-I, Aircraft Rules and Regulation, Wind Tunnel Techniques, Maintenance of Airframe and System, Helicopter Theory, Avionics-II, Maintenance of Power Plant and System, Unmanned Aerial Vehicles & Systems (UAV), Space Mission Design & Optimization, CAD, Airlines and Airport Management.

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

FOR OLD SCHEME INSTRUCTIONS ARE SAME AS ON QP FORMAT OF OLD SCHEME

Question Paper & Student Details

Mid Term *		Date of Submission of QP	12/28/2020
Name of Faculty *		Date of Examination *	
Subject *		Course*	
Batch		Semester *	
Email Id of Faculty:*		Phone Number of Faculty*	
Student Name		Student Reg No.	

Part C (2017 Scheme)

Question: 1*

Lesson Plan *

Topic*

Source*

Question: 2*

When a coal sample of 0.90g was burnt in bomb calorimeter the following data were obtained ,the coal sample contains HYDROGEN (H) =5% ,OXYGEN (O)=6%, calculate HCV ,LCV of coal in kcal/kg assuming latent heat of steam =550cal/g:
Observation:-
Weight of coal sample burnt =0.900g
Weight of water taken in calorimeter =2300.00g
Water equivalent of calorimeter =560.00g
Rise in temperature =2.480 ^{o}C
Cooling correction =0.064^{o}C
Fuse wire correction=10.00cal
Acid correction =6.00cal

Lesson Plan *

Question: 3

Lesson Plan

Topic

Source

Question: 4

Lesson Plan

Topic

Source

Question: 5

Lesson Plan | Topic | Source

Question: 6

Lesson Plan | Topic | Source

I have scrutinized the question paper. There is no spelling mistake or any type of irrelevant question.

Vijay Laxmi Verma