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UNIVERSITY OF PETROLEUM & ENERGY STUDIES

DEHRADUN

End Semester Examination- December 2019

Program/course: MBA OG **Semester – I**
Subject: FOGB **Max. Marks : 100**
Code : MDSO 801 **Duration : 3 Hrs**
No. of page/s: 3

Notes - Attempt all questions. Answer in chronological order only . Use block diagram if so required.

Section - A Max. Marks : 10

Each carries equal marks. Please write the most appropriate correct answer.

A-1 PLEM's & SBM role in pipeline. CO1

A-2 Assess the impact in a refinery if Heater-Treater function stops. CO1

A-3 Role and objective of Glycol in natural gas treating **.** CO1

A-4 Different methodologies in EOR helps getting extra crude production? CO2

A-5 HSE in upstream sector, give one example each in up-stream and down –stream. CO2

Section - B Max. Marks : 30

Each carries equal marks.

B-1 Differentiate Natural Gas & LNG in all physical parameters? Elucidate the functions of an LNG regasification terminal for its industrial applications? CO1+CO2

B-2 During produced gas & oil production lot of water, Chemicals and Polymers are used , in what way you suggest this issue to be handled in the global industry?
CO1+CO2+CO3

B-3 The fresh crude oil received from the wellhead necessitates further processing, elucidate the same using a flow chart. CO1+CO3

Section - C Max. Marks : 40

Each carries equal marks.

C-1 Differentiate five different global contract, justify the application of contract for India. CO2+CO3

C-2 Relevance and application of Plant Life Cycle in Oil and Gas industry. Describe the application of the various business functions supported by IT. (Hint : Role of ITES companies i.e. IBM, Infosys, Accenture ect.) CO3+CO4

C-3 Pipelines are a very important mode of oil and gas transportation. Please describe the pipeline / pipeline project/ activities which are supported by IT. Differentiate cost impact on on-shore /off-shore pipeline. CO2+CO3+CO4

C-4 Marker oil is a reference in the oil market, apply the condition it is called bench-mark crude in the market. Exemplify the global Crude Oil markets and their bench-mark crudes? Crude oil's impact on GTL. CO3+CO4

Section - D **Max. Marks : 20**

A BURMA-CHINA PIPELINE

The proposed Burma-China oil pipeline aims to reduce China's reliance on oil shipped through the Malacca Strait. The idea of the pipeline was first articulated publicly in 2004 by Yunnan University professor Yang Xiaohui. Yang argued that given Burma and Southeast Asia's historical collective role as a "backdoor" supply line for China, a Burma-China line would reduce reliance on Malacca and help secure Chinese oil imports. National and local economic development interests then worked to generate additional support for the project. The Yunnan provincial government subsequently professed its support for the project, and in early 2006 the Burma-China pipeline emerged on the national radar screen when the National Development and Reform Commission's (NDRC's) 2005 "Refining Industry Development Overview" named it one of four key oil import channels. The paper has proposed pipeline route and facilities that might be associated with the project.

It appears that CNPC will finance the bulk of the line's construction costs, in addition to supporting infrastructure. If the project proceeds, by 2010 CNPC plans to construct an oil wharf capable of berthing tankers of 300,000 deadweight tonnage, as well as storage facilities capable of holding more than four million barrels of crude. The project will be a key element of China's plans to promote inland economic development, as its southwest provinces of Yunnan, Tibet, Guizhou, and Guangxi, as well as Chongqing Municipality, often have difficulty receiving stable fuel supplies from the refining centers at Lanzhou and Guangzhou.

One proposal includes constructing a 400,000 bpd refinery and a co. located million-ton-per-year ethylene plant near Kunming, Yunnan. The government of Chongqing Municipality, with the support of Sinopec, has also proposed extending the line to Chongqing and building refining facilities there.The pipeline's initial capacity is slated to be 200,000 bpd, but if it is expanded to 300,000 or 400,000 bpd both Kunming and Chongqing could build refineries of significant size. It is currently unclear whether or not the tragic May 2008 Sichuan earthquake might cause national and provincial officials to reconsider locating a large refinery near an active seismic zone.

The NDRC might prefer constructing refineries near both cities, as it allows both areas to gain economically and would also permit the central government to reward both of the main state-owned refiners, CNPC and Sinopec. Southwest China is currently a zone of competition between the two, with traditional oil company "spheres of influence" overlapping increasingly as each company seeks a greater degree of vertical integration and tries to seize market share. For example, CNPC and Sinopec competed vigorously in early 2007 to win approval to build a 200,000 bpd refinery in Guangxi. CNPC emerged victorious, probably because it can use its flagship Sudan project to guarantee crude oil supplies to the refinery.

From the economic perspective, a Burma-China pipeline may make sense, as the costs of piping crude to inland refineries in southwest China and then distributing refined products through the expanding pipeline network likely approximate those of shipping crude by tanker to southeast China, refining it there, and then shipping products by pipe or rail to southwest Chinese consumers.

A comparative example of overland pipeline crude competing successfully with seaborne crude in a continental market is that of Canadian oil imports into the midwestern United States. Recently, the well developed American pipeline network has allowed Canadian crude to penetrate almost to the Gulf Coast, the epicenter of U.S. seaborne crude imports.China's pipeline network for crude and products cannot compare with that of the United States at present, but the NDRC and the state oil companies are working quickly to expand China's domestic pipeline systems for oil and refined products, so regional markets are likely to become increasingly integrated over time.

The Burma-China pipeline also provides an impetus for enhancing crude and product supplies by building additional regional refineries and expanding the area's product pipeline networks. Oil product demand, particularly for motor fuels, has been growing strongly in southwestern China in recent years as the area undergoes rapid economic development and consumer incomes rise. Historically, the region has been short on refining capacity and a refinery at the terminus of the pipeline from Burma would help to address this deficiency.Expanding regional oil-processing capacity will also create significant employment, through construction work and, later, for manning the facilities. As China reforms its domestic oil pricing system, having refineries in remote southwest China might give the owner of those plants a high degree of price-setting power and the ability to charge a premium for fuel produced.

From the security perspective, however, a Burma-China pipeline largely fails the test. It would allow around 200,000 bpd of oil imports to bypass the Ma lacca Strait, yet it would be exposed to major security risks in Burma, which is ruled by a capricious junta and still struggles with ethnic separatism in regions through which the pipeline will pass. Separatism still smolders in Burma's hinterlands, as evidenced by the August 2009 clashes in Burma's Kokang region that sent at least thirty thousand refugees streaming into China's Yunnan Province. Transit countries hosting pipelines gain significant strategic leverage. This leverage can manifest itself in calculated strategic moves or in disputes over other factors, such as pricing and transit payments. For example, Ukraine effectively reduced European natural-gas supplies in the winter of 2005-2006 by siphoning off gas to replace supplies to Ukraine that Gazprom had cut and was able thereby to put Russia in a very difficult position diplomatically. The same dynamic unfolded in even starker fashion when Gazprom cut off gas supplies to Ukraine in January 2009 and gas supplies actually stopped for several days to a number of Eastern and Central European consumers of Russian gas.

China would also be seen as directly financing the Burmese junta's rule and its repression of the population, since an operational oil line would likely generate direct transit payments of at least fourteen million dollars a year.Furthermore, in the event of conflict, the oil port/pipeline terminus at Sittwe on Burma's coast would be a concentrated target set, highly vulnerable to blockade or precision strike.

A proposed canal across Thailand's Kra Isthmus, now stalled, appears unrealistic. Zhang Xuegang, a scholar at the China Institutes of Contemporary International Relations, maintains optimistically that it "could . . . provide a strategic seaway to the Chinese navy" through which "fleets could . . . more easily protect the nearby sea-lanes and gain access to the Indian Ocean."But a canal across the isthmus could cost twenty billion dollars or more to build and, like the Burma-China pipeline, would simply concentrate the target set for potential blockaders.

D-1 How important this pipeline is for China? Is this the best possible solution for the country (Burma)? CO3+CO4

D-2 Draw a comparison among USA- Canada , Russia pipelines with Burma-China pipeline. CO2+CO4