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Quiz-4: Seismic Data Processing and Interpretation (GPC 517) of Monsoon Semester: 2020-21

1 message

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To: deepak.19mc0025@agp.iitism.ac.in

Sat, Oct 31, 2020 at 10:04 AM

Thanks for filling out [Quiz-4: Seismic Data Processing and Interpretation \(GPC 517\) of Monsoon Semester: 2020-21](#)

Here's what we got from you:

Quiz-4: Seismic Data Processing and Interpretation (GPC 517) of Monsoon Semester: 2020-21

Answer all questions

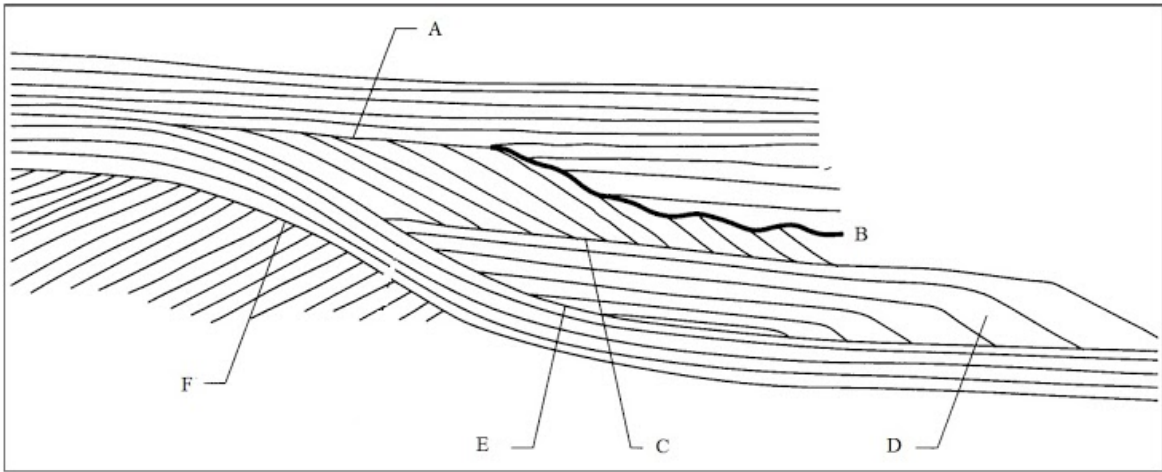
Maximum Marks : 30

No negative marks

7th Semester Integrated M.Tech. and 3rd Semester M.Sc.Tech.

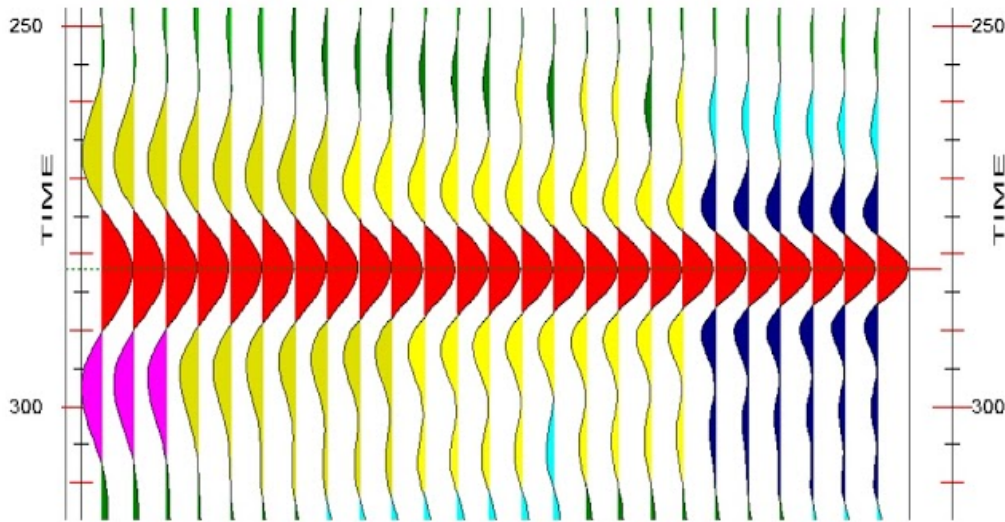
Your email address (deepak.19mc0025@agp.iitism.ac.in) was recorded when you submitted this form.

Identify "A", "B", "C", "D", "E" & "F" based on Sequence Stratigraphy analysis. *

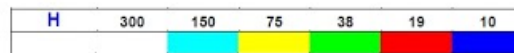


A = toplap, F = unconformity, E = ONLAP, C = DOWNLAP, D =OFFLAP, B = EROSIONAL TRUNCATUON

Calculate the wavelength from seismic response (expanded time scale) along with seismic resolution for gas sand reservoir for the first trace on the left and the last trace on the right. The seismic response relates to wavelet of 15-45 Hz on the left to 15-93 Hz on the right. Velocity of gas sand 6500ft/sec & Dominant Frequency 1000 Hz *



For Frequency Ranges: 15-40 Hz to 15-88 Hz



6.5 ft

Statistical Estimation of wavelet can be possible based on the following approach. *

- Spiking Deconvolution
- Homomorphic Deconvolution
- Structural Deconvolution
- Above all

Advantages for using AI log during wavelet processing and stratigraphic interpretation are----- (mention any two points) *

a attempt to remove the wavelet which can reduce wavelet side lobe and tuning effects

What is an angular unconformity? *

angular unconformity occur where rocks below the surface have been tilted at an angle and eroded prior to deposition of the younger strata.

Unconformable surfaces are *

- Discontinuous surface
- Erosional surface
- Non-depositional surface
- Above all

Name the different type of hydrocarbon-bearing traps. *

1-structural traps, 2- stratigraphic traps, 3- strati - structural

Identify the highest density value of the following lithologies. *

- Anhydrite

- Salt
- Sandstone
- Limestone

“Fault termination is part of structural interpretation” *

- True
- False

Preparation of structural contour map follows the following rules. *

- Contour never end
- Contour never cross
- Contour never bifurcate
- Above all

What type of lithology is necessary for tuning to be a contributing factor for seismic reflection amplitude? *

structural and stratigraphical

Calculate the two critical angles based on following information of the top layer velocity information. Model 1 for 1st layer : V_p : 6000 ft/s & V_s : 3000 ft/s and for Second layer : V_p : 20000 ft/s & V_s : 10000 ft/s *

critical angle p wave = 17.45 degree, critical angle for s wave =17.45 degree

Final image of the cap of Salt distort due to, *

- Diagenesis

- Thin cap
- Misinterpreted with flank sediments
- Above all

Diffraction Image Extraction by moving average error filter is an effective process.

*

- True
- False

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