

Quiz # 1: Seismic Data Processing and Interpretation Practical (GPC 519); Monsoon Semester (2020-21)

Total points 17/30

Date: 06/10/2020

Time: 3:30 pm to 4:00 pm

Maximum Marks: 30

Answer all questions; no negative marks

The respondent's email address (**deepak.19mc0025@agp.iitism.ac.in**) was recorded on submission of this form.

✓ Stacking velocity analysis is strongly influenced and severely hampered due to the absence of, *

2/2

- Long offset data
- Mid offset data
- Near offset data
- Zero offset data



✗ Find out a single value of the signal to noise ratio of the traces from the following information, Signal: 150, 120, 30 and Noise = 20, -50, 9 *

0/2

11.0313 in db



Correct answer

14.28



✘ Find out Δt NMO separately from the following information, Correct answer will be taken up to three-digit after the decimal. Time 250 ms; for Offset = 1000m and velocity = 2000 m/s. & Time 500 ms; for Offset = 2000m and velocity = 3500 m/s. *

0/3

nmo 1=0 .5sec , nmo 2 =0 .326

✘

Correct answer

0.309 & 0.443

✓ Calculate Output of Convolution model from the following signals: Signal 1: 2, -2, 1 and Signal 2: 2, -3, 1, -1, 1 *

5/5

4,-10,10,-7,5,-3,1

✘

Correct answer

4, -10, 10, -7, 5, -3, 1

✘ Calculate Output of Cross-correlated signal from the following signals: Signal 1: 2, -2, 1 and Signal 2: 2, -3, 1, -1, 1 *

4/5

2,-4,5,-9,11,-7,2,0,0.00

✘

Correct answer

2, -7, 11, -9, 5, -4, 2



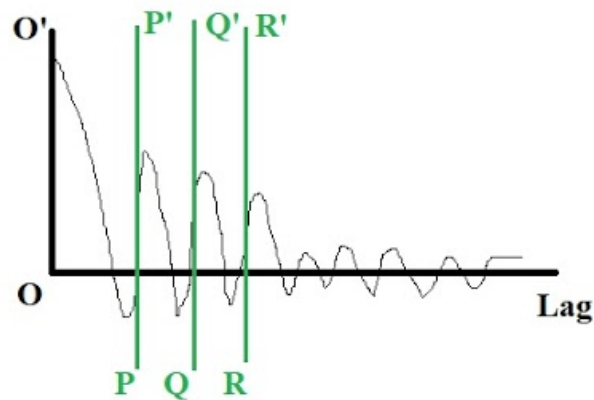
✗ What are the parameters are required to set for performing Spiking Deconvolution in Matlab language? Provide only the name of the parameters. * 0/3

1 - predictive length, 2 - operator distance ✗

Correct answer

Autocorrelation window (w), Filter length (N), Percent pre-whitening (ϵ)

✓ Identify the "Gap" and Zero Crossing from the diagram. * 2/2



- OO' to PP' & PP' ✓
- OO' to QQ' & QQ'
- OO' to RR' & RR'
- PP' to QQ' and QQ'



✗ State the two steps process for Residual Statics. *

0/2

1 - to improve the stacking quality, 2 it is performed on moveout correction ✗

Correct answers

1. Remove long period static corrections using refraction data
2. Remove remaining short period static correction using reflection data

✓ Reflection and Transmission loss for the seismic trace is related to the following criteria. *

2/2

- Velocity is a function of the elastic constant and density of the rock formation.
- Loss of seismic energy is proportional to the number of reflectors. ✓
- Velocity increases with depth of burial.
- None of the above

✗ High pass filter is used to remove: *

0/2

- Low frequency surface wave
- High frequency surface wave ✗
- Noise of Automobile Traffic
- Noise of High tension power supply

Correct answer

- Low frequency surface wave



✓ Identify the correct option for extended 1D convolution model of the seismic trace. Alphabets are showing standard notation of the seismic traces. * 2/2

$s(t) = w(t) * e(t) * sg(t) * rg(t) * i(t) + n(t)$ ✓

$s(t) = w(t) * e(t) * sg(t) * rg(t) * i(t)$

$s(t) = w(t) * e(t) * sg(t) * rg(t) + n(t)$

None of the above

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