

Quiz -1 ; Seismic Data Processing & Interpretation (GPC - 517); Monsoon Semester (2020-21)

Total points 24/30

Answer all questions

Maximum Marks: 30

Time: 11:00 am to 11:30 am

3rd Sem. M.Sc.Tech. & 7th Sem. Integrated M.Tech.

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

✓ What is the full form of PGC? *

1/1

- Probable Gain Control
- Possible Gain Control
- Pure Gain Control
- Programmed Gain Control



✗ Primary reflection amplitude = 1; Reflection Coefficient of the water bottom = R and reflection coefficient of the surface = -1; then, the amplitude reflected upward at the water bottom will be, *

0/2

-R(1+R)

R(1+R)

1+R

-(1+R)

✗

Correct answer

-R(1+R)

✓ A signal $f(t)$ has a duration of 2ms and an essential bandwidth of 10kHz. It is desirable to have a frequency resolution of 100 Hz in the DFT. Frequency Resolution =100, Determine No (Periodic sequences). *

100

200

300

400

✓



- ✓ Find out the variable/variables which is/are related to LMO. * 1/1
- Raw first break time
 - Offset for Trace being corrected
 - Refraction velocity of 1st refractor
 - All variables mentioned above ✓

- ✗ The constant term in inelastic attenuation is expressed as, * 0/1
- Unitless
 - dB ✗
 - mV/sec
 - dB/sec

Correct answer

- dB/sec

- ✓ The other name of the gapped decon is, * 1/1
- High cut filter
 - Prediction error filter ✓
 - F-K filter
 - Mute



- ✗ Explain the interpretation process based on estimation of interval velocity from following information. $V_n = 2800$ m/s; $V_{n+1} = 2500$ m/s; $T_n = 2$ s; $T_{n+1} = 2.25$ s. *

0/3

thickness n layer is =1400m,and thickness nth 111.11m 111.11

✗

Correct answer

2.25 s is too slow & 2 s is too fast.

- ✓ Estimate NMO velocity from the following option where the horizontal layer has dip. Travel time at offset = 2 s; Travel time at zero offset = 1 s; Offset = 1000 m; Dip = 35 degree; There area no lateral velocity variations. *

3/3

- 522.525 m/s
- 622.525
- 722.525
- None of the above

✓

- ✓ Separating signal from noise through transform field from T-X to F-K domain is based on, *

1/1

- Apparent velocity differences
- True velocity differences
- Frequency differences
- Offset differences

✓



✓ Find out correct option "Airwave is a coherent Noise". * 1/1

True



False

✓ $V(NMO) = 2264$ m/s for getting result as flat event. Using velocity 2000 m/s will be, * 2/2

Under corrected

Overcorrected



CMP Gather

Muting

✓ Characterize the Swell Noise. * 1/1

Low frequency & high amplitude



High frequency & low amplitude

Low frequency & low amplitude

None of the above



✓ Find out receiver static correction from the following information when 3/3
the source is at the surface. Elevation of the surface at receiver position
= 10m; Elevation of the base of the weathering layer at the receiver
position = 30m; Velocity of weathering layer = 560 m/s; Replacement
velocity = 1230 m/s; Elevation of Datum plane = 230 m. *

- 0.257
- 0.197
- 0.339
- None of the above



✓ To go from the frequency domain to the time domain for sampled data 1/1
requires. *

- FFT
- IFFT
- FT
- HT



✓ What does it mean by Amplitude spectrum? * 1/1

- Amplitude vs Frequency plot
- Amplitude vs Time plot
- Amplitude vs Phase plot
- Frequency vs Phase plot



✓ Which filter will be used for eliminating Ground roll? * 1/1

- Notch
- F-K
- Hi Cut
- Mute



✓ Find out the correct answer of Nyquist frequency for sample period 4 ms. * 2/2

- 62.5 Hz
- 250 Hz
- 125 Hz
- 500 Hz



✓ Name the format of the seismic dataset. * 1/1

- .SEG Y
- .SEG D
- .SEG B
- All formats mentioned above



✓ Find out the correct option. "Field Data are recoded in multiplexed mode". * 1/1

- True
- False



✓ The objectives of deconvolution is/are, * 1/1

- Shorten reflection wavelet
- Attenuate ghosts
- Reverberations
- All objectives mentioned above



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