

Quiz -2:

FM: 30

1. 30° Dip limits is a part of which algorithm? (1)
 - a. Higher order Explicit
 - b. Lower order Explicit
 - c. Implicit
 - d. None of the above

2. CMP stack sections provide a distorted view of the structure other than flat reflectors due to the following reason/reasons, (1)
 - a. Dip of reflector segments are decreased and spatial extents are increased
 - b. Buried foci become bow ties for syncline
 - c. Crossing reflections may be produced on the limbs for anticline
 - d. All mentioned above

3. Which imaging technique will produce quick result based on following option? (1)
 - a. Pre-stack partial Migration
 - b. Depth Migration before stack
 - c. Time Migration before stack
 - d. Time migration after stack

4. When Generalized Stolt Migration is possible? (1)
 - a. $W = 0.7$
 - b. $W = 0.6$
 - c. $W = 0.8$
 - d. All mentioned above

5. In which condition of wavelet migration works good? (2)

Ans. Zero phase & wide bandwidth.

6. What is/are input parameter/parameters of the Kirchhoff Migration from the following? (1)
 - a. Aperture width
 - b. Maximum dip
 - c. Velocity field
 - d. All mentioned above

7. Maximum Dip value can be taken care by which post-stack Migration? (1)

a. 1-pass Kirchhoff

b. Cascaded Kirchhoff

c. Cascaded FD

d. 1-pass FD

8. Which migration algorithm has maximum relative speed? (1)

a. Stolt @ $W=0.5$

b. Stolt @ $W=1$

c. Kirchhoff

d. FD

9. How migration velocity relates to true velocity? (1)

Ans. $Z_r V_r = Z_f V_m$;

Z_r = True Depth

V_r = True velocity

Z_f = Focusing Depth

V_m = Migration velocity

10.



Identified the record time of the mentioned wavelet. (1)

a. Early

b. Middle

c. Late

d. Dual

11. Find out Migration from the following information. (2)

Dip angle = 12° ; Average velocity = 1200 m/s and Two way travel time = 1500 ms.

Ans.: Aperture 186.3 m;

dt= 191.30; dx=114

12. What kind of deconvolution process will be helpful for AVO analysis? What type precaution need to be taken during AVO analysis for this deconvolution process? (2)

Ans. Surface consistent deconvolution & Wiener filter should not be used.

13. Find out the angle of the dipping bed before & after migration based on following information. (3)

$\Delta t = 7$ unit & $\Delta x = 10$ unit.

Ans. 34.99° (Before)

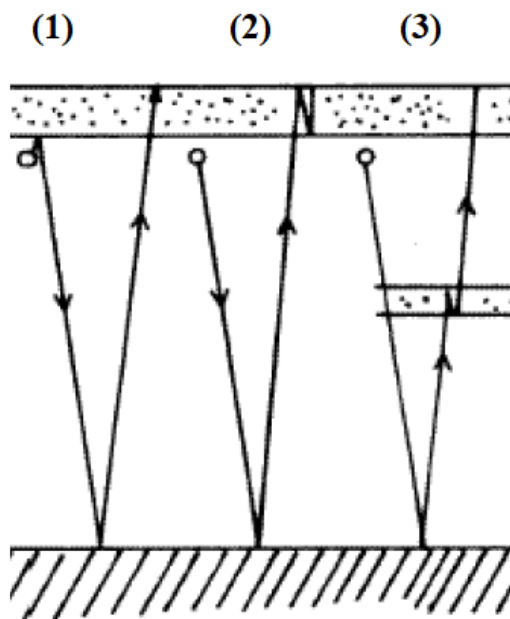
44.42° (After)

14. Tau-P transformation is a special case of RADON transformation. (1)

a. True

b. False

15. Identify the 3 events from the following diagram. (3)



Ans.

(1) Ghost

(2) Near Surface Multiple

(3) Peg-leg Multiple

16. $P(x, z=0, t)$ is applied as a surface boundary condition for RTM process. (1)

a. True

b. False

17. What are the functions are used for designing the Weiner-Hopf optimum filter? (2)

Ans. Autocorrelation of Input trace or Gate; deconvolution filter; cross correlation with input and desired output.

18. In the reverse time depth migration it is assumed $P(x,z,t) = 0$ for $t > T$ (last recorded time sample). Justify. (2)

Ans. After the last recoded time sample, the energy has propagated away from the subsurface underneath the seismic line.

19. 3D RMS velocity field can be estimated from 3D pre-stack time migrated data. (1)

a. True

b. False

20. Largest over-migration with two pass approach usually occurs at around. (1)

a. 90°

b. 45°

c. 15°

d. 35°

21. A spatially high-frequency event on a time slices is,

a. Steeply dipping or high-frequency event in time

b. Gentle dipping or high-frequency event in time

c. Steeply dipping or low-frequency event in time

d. Gentle dipping or low-frequency event in time