

اجب عن جميع الاسئلة**Question (1) 10 marks**

- Put " X " or " \sqrt " between the bracket
- Horizontal drilling decreasing exposure of the reservoir to increase productivity ()
- The summation of the course horizontal depths of an inclined wellbore is called true vertical depth ()
- The inclination of course measured in a clockwise direction from 0^0 to 360^0 ; 0^0 is north ()
- Inclination and direction can be measured with gyroscopic single shot ()
- A tool face measurement is required to orient a bit is called whip stock ()
- One of the possible types of completion in horizontal wells is slotted linear ()
- In the case of the very low vertical permeability, the horizontal well actually produces a higher rate than the vertical well. ()
- The productivity improvement factor (PIF) estimate is only a quantitative check on the potential benefit of a horizontal well ()
- The high side is defined as the direction of the wellbore ()
- The right rotation must be compensated for by reorienting the tool face enough to offset the reverse torque effects. ()

Question(2) 10 marks

- Given the following data, compute the average hole curvature (dog-leg severity) between stations 1 and 2 using Lipinski chart.

	1	2
Depth, ft.	3,666	3,696
Vertical deviation	3.5^0	4.5^0
Horizontal direction	N 11^0 E	N 23^0 E

- Complete the following:

Horizontal well radius type	Radius (ft.)	Build up rate (/100 ft.)
Long		
medium		
short		

Question(3) 20 marks

- Plan a build- and- hold directional well whose coordinate of surface location is (North 2830ft., East 1000ft.), and target location is (North 800ft., East 2000ft.). TVD to the target is 10,500 ft. Rate of build should be $1.5^0/100$ ft. Kick off depth is 2,450 ft. Your plan should include the following: **(1)** maximum inclination angle reached, **(2)** measured depth to the end of the build and to the target, **(3)** horizontal departure to the end of the build and at TVD s of 5,450 ft. **(4)** measured depth at TVD s of 5,450 ft.
- Plan a directional program using a build, hold, and drop trajectory path for which the Kick off depth is 3,100 ft. and the maximum required departure is 2,100 ft. Rate of build should be $2^0/100$ ft., and rate

of drop should be $2^0/100$ ft. drop (1) If the TVD is 10,200 ft. where the hole return to vertical, what is the maximum inclination reached (2) How much casing will you have to purchase for a well with a TVD bottom-hole target of 10,200ft.(3)How long is the hold section(4)If the drilling plan calls for an intermediate string to be run to TVD of 8,210 ft., how much casing is needed, and what is the horizontal departure at the casing shoe.

Question(4) 10 marks

1. Determine the new direction for a deflection tool set at 2,326 ft. with a tool face setting of 45^0 left of high side for a course length of 33 ft. The inclination is 9^0 and the direction is S25E of 2,326 ft. The dog leg severity is 4^0 and index of angle change is 99ft.
2. What are the direction, in alternative format, of each of the following wells:
 - A. Well A 79^0
 - B. Well B S 63 W
 - C. Well C 90^0
 - D. Well D N18E

انتهت الاسئلة

CHANGE OF OVER-ALL ANGLE

DEGREES

5 1 2 3 4 5 6 8 10 20 30 40 50 90

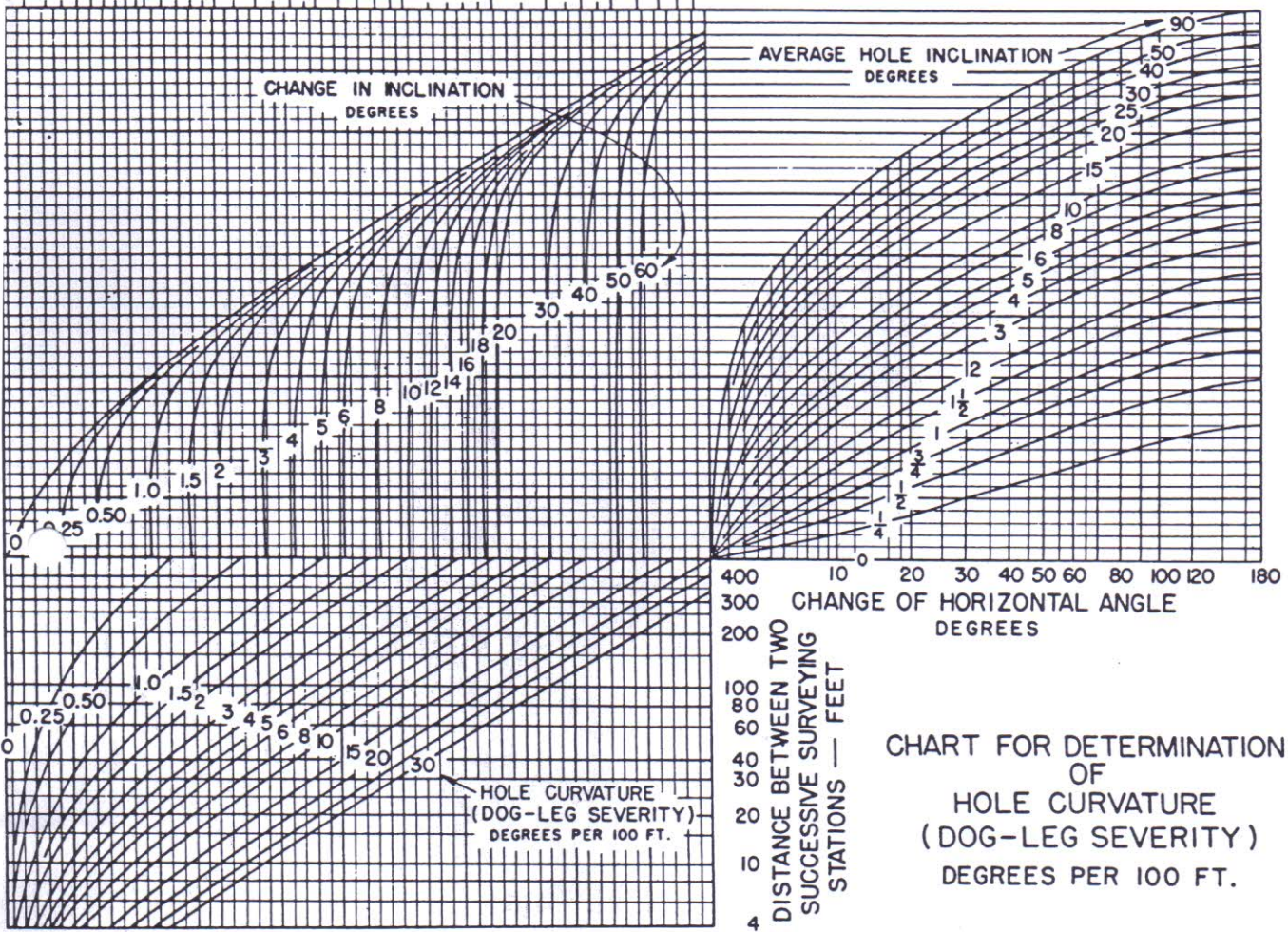


CHART FOR DETERMINATION OF HOLE CURVATURE (DOG-LEG SEVERITY) DEGREES PER 100 FT.