



قائمة الاسئلة

(50) تقييم المكامن - (PNGE325)- المستوى الثالث -قسم هندسة نفط وغاز - الكل - كلية البترول والموارد الطبيعية - الفترة الثانية- درجة الامتحان

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- 1) Most logs are influenced by environmental effects which include the following except
  - 1) - The mud and mud cake
  - 2) - layer thickness
  - 3) - shoulder bed
  - 4)  + dual spacing
- 2) In normal cases  $R_w \ll R_{mf}$ , the SP deflection from the shale baseline is
  - 1) - positive (right)
  - 2)  + negative (left)
  - 3) - positive (left)
  - 4) - negative (right)
- 3) The most influence of clay mineral distributions on effective porosity is made by
  - 1) - Structural clay
  - 2)  + dispersed clay
  - 3) - clay laminations
  - 4) - all of them
- 4) Gas zones can often be identified by comparing
  - 1) - the density log with another porosity log or a core analysis.
  - 2)  + the neutron log with another porosity log or a core analysis.
  - 3) - the sonic log with another porosity log or a core analysis.
  - 4) - the NMR log with another porosity log or a core analysis.
- 5) The Archie equation links porosity and resistivity with the amount of..... present
  - 1) - Formation factor
  - 2) - Permeability
  - 3) - Oil
  - 4)  + Water
- 6) Relative permeability is one of the ..... Core analysis
  - 1) - Standard
  - 2)  + Special
  - 3) - Routine
  - 4) - No Answer
- 7) Bit that can be visualized as a hollow cylinder with cutters on the outside
  - 1)  + core bit
  - 2) - drill bit
  - 3) - core barrel
  - 4) - whole core
- 8) Three types of analysis are performed depending on the size of the sample:
  - 1) - A) whole, plug, and sidewall core
  - 2)  + B) fullpore, extracted plug, and sidewall core
  - 3) - C) a and b are correct
  - 4) - D) No Answer
- 9) It may even happen that the cores are wrongly labelled or put upside down in their boxes
  - 1) - A) physical configuration
  - 2) - B) depth offset
  - 3)  + C) depth mismatch
  - 4) - D) b and c are correct





- 10) The most important use of resistivity logs is
- 1) - determination of water saturation
  - 2)  determination of hydrocarbon-bearing versus water-bearing zones
  - 3) - determination of hydrocarbon saturation
  - 4) - No Answer
- 11) There are three resistivity-curve
- 1) - RLLD, RLLS, RMLD
  - 2)  RLLD, RLLS, RMSFL
  - 3) - MLD, LLD, LLS
  - 4) - No Answer
- 12) are used to graphically correct RLLD to  $R_t$  and to determine the diameter of invasion ( $d_i$ ) and the ratio  $R_t/R_{xo}$ , from which  $R_{xo}$  can be determined.
- 1) - Schlumberger charts
  - 2)  no answer
  - 3) - Tornado log
  - 4) - Baker Atlas Charts
- 13) By design, induction logs work well in wells containing
- 1) - nonconducting fluids (where  $R_{mf} < 3 R_w$ ).
  - 2)  nonconducting fluids (where  $R_{mf} > 3 R_w$ ).
  - 3) - nonconducting fluids (where  $R_{mf} = R_w$ ).
  - 4) - conducting fluids (where  $R_{mf} > 3 R_w$ ).
- 14) The dual induction log also has a third resistivity curve
- 1)  a shallow-reading, focused, laterolog-type measurement
  - 2) - a shallow-reading, focused, induction-type measurement
  - 3) - a medium-reading, focused, inductio-type measurement
  - 4) - a deep-reading, focused, laterolog-type measurement
- 15) The interpretation of lithology and porosity is accomplished through
- 1) - core analysis
  - 2)  crossplots
  - 3) - logs
  - 4) - No Answer
- 16) The combination of the ..... measurements is probably the most widely used porosity log combination.
- 1) - Density-Sonic
  - 2)  Neutron-Density
  - 3) - Neutron- Sonic
  - 4) - Spectral Density
- 17) Unlike the other porosity measurements, the porosity determined from it is much less sensitive to lithologic changes
- 1) - DPFI
  - 2) - NPFI
  - 3) - SPFI
  - 4)  NMR
- 18) When sonic porosities of carbonates with vuggy or fracture porosity are calculated by the Wyllie formula, porosity values are
- 1) - too high
  - 2)  too low
  - 3) - equal to the actual
  - 4) - no answer
- 19) If the formation's actual matrix density ( $\rho_{ma}$ ) is less than the matrix density used to calculate the porosity the





- log shows a calculated porosity that
- 1) - is lower than the actual porosity of the formation.
  - 2)  + is higher than the actual porosity of the formation.
  - 3) - is equal to the actual porosity of the formation.
  - 4) - no answer
- 20) Logging speed is usually adjusted such that the tool travels 1 ft in one time constant period.
- 1)  + TRUE.
  - 2) - FALSE.
- 21) The presence of shale in a permeable formation reduces the SP deflection
- 1)  + TRUE.
  - 2) - FALSE.
- 22) Where invasion of a formation is shallow, the low density of the formation's hydrocarbons causes the calculated density porosity to be smaller than the actual porosity
- 1) - TRUE.
  - 2)  + FALSE.
- 23) Higher resistivities reduce the deflection of the SP curves.
- 1)  + TRUE.
  - 2) - FALSE.
- 24) If the effect of hydrocarbons is not corrected, the sonic-derived porosity is too high.
- 1)  + TRUE.
  - 2) - FALSE.
- 25) The percentage of secondary porosity, called SPI or secondary porosity index, can be a useful mapping parameter in carbonate exploration.
- 1)  + TRUE.
  - 2) - FALSE.
- 26) The nonlinear responses of gamma ray log are based on geographic area or formation age
- 1)  + TRUE.
  - 2) - FALSE.
- 27) The neutron log is normally plotted with the scale increasing to the left while the scale of the density log increases to the right.
- 1)  + TRUE.
  - 2) - FALSE.
- 28) Of the various types of logs, the ones used most frequently in hydrocarbon exploration are called production logs.
- 1) - TRUE.
  - 2)  + FALSE.
- 29) The two primary parameters determined from well log measurements are porosity and water saturation
- 1) - TRUE.
  - 2)  + FALSE.
- 30) The ability of a rock to transmit a single fluid, when it is completely saturated with that fluid, is called effective permeability
- 1) - TRUE.
  - 2)  + FALSE.
- 31) Anhydrite and salt are normally very clean, and have very low GR values.
- 1)  + TRUE.
  - 2) - FALSE.
- 32) In common oilfield formations, the speed of sound depends principally upon the rock matrix material and the porosity.
- 1)  + TRUE.





- 2) - FALSE.
- 33) Permeable zones are indicated where there is SP deflection from the shale baseline
- 1)  TRUE.
- 2) - FALSE.
- 34) The density log does not respond primarily to the amount of hydrogen in the formation.
- 1)  TRUE.
- 2) - FALSE.
- 35) The density log can assist the engineer to identify evaporite minerals
- 1)  TRUE.
- 2) - FALSE.
- 36) When the lithology of a formation is limestone, apparent limestone porosity must be corrected to true porosity
- 1) - TRUE.
- 2)  FALSE.
- 37) Oil does not significantly affect density porosity, but gas does (gas effect).
- 1)  TRUE.
- 2) - FALSE.
- 38) The gamma ray response is affected by formation water resistivity ( $R_w$ ),
- 1) - TRUE.
- 2)  FALSE.
- 39) Clean sandstone might also produce a high gamma ray response if the sandstone contains potassium feldspars, micas, glauconite
- 1)  TRUE.
- 2) - FALSE.
- 40) The measured SP value is influenced by porosity
- 1) - TRUE.
- 2)  FALSE.
- 41) DLT is
- 1) - density tool
- 2)  the dual laterolog
- 3) - lithology log
- 4) - No answer
- 42) is the first step in any interpretation procedure.
- 1) - Formation evaluation
- 2)  zoning
- 3) - modern interpretation
- 4) - all answers
- 43) The current can be produced and measured by either of two methods
- 1) - laterolog & Coils
- 2) - Resistivity & Induction
- 3) - Galvanic & Conduction
- 4)  all answers
- 44) The lithology can be obtained from one log
- 1)  TRUE.
- 2) - FALSE.
- 45) In the borehole, the SP curve is recorded at formation temperature where  $R_{mf}=0.30$  ohm/m, and  $R_w = 0.03$  ohm/m. What is the expected deflection?
- 1)  No Deflection
- 2) - To the Left
- 3) - To the Right





- 4) - Narrow and pointed
- 46) It is the fractional ratio of the effective permeability of certain phase at a particular saturation to the absolute permeability of that fluid at total saturation
- 1)  relative permeability
  - 2) - effective permeability
  - 3) - absolute permeability
  - 4) - no answer
- 47) is caused by the dissolution of soluble material such as shell fragments after the rock has been formed.
- 1) - (Original) Porosity
  - 2)  (Induced) Porosity
  - 3) - Total Porosity
  - 4) - Fenestral porosity
- 48) A "two-dimensional" way of looking at logs
- 1) - spectral Gamma
  - 2) - density tool
  - 3)  special charts
  - 4) - no answer
- 49) In hydrocarbon-bearing zones, the SP deflection is reduced. This effect is called
- 1) - SPI
  - 2)  Hydrocarbop suppression
  - 3) - SSP
  - 4) - PSP
- 50) The influence of the drilling mud on a log response depends on Mud-salinity
- 1)  TRUE.
  - 2) - FALSE.

