



قائمة الاسئلة

امتحان نهاية الفصل الدراسي الأول - للعام الجامعي 1446 هـ - كلية البترول والموارد الطبيعية :: خصائص و نمذجة المكنن - (GEOS425)
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- 1) The Property model is built from the depth-converted seismic horizons and fault data
 - 1) - TRUE.
 - 2) FALSE.
- 2) seismic data are generally point source data from a non-regular 'grid' over AOI
 - 1) - TRUE.
 - 2) FALSE.
- 3) Porosity is a dynamic property where Permeability is a static property
 - 1) - TRUE.
 - 2) FALSE.
- 4) Each facies should have porosity and permeability distribution that is different from the other facies.
 - 1) TRUE.
 - 2) - FALSE.
- 5) Composite Log will form the 'basic input data' for reservoir modelling.
 - 1) TRUE.
 - 2) - FALSE.
- 6) Facies modelling is about capturing the fine-scale distribution of porosity, permeability and water or hydrocarbon saturation
 - 1) - TRUE.
 - 2) FALSE.
- 7) A facies model is the foundation of the property model
 - 1) TRUE.
 - 2) - FALSE.
- 8) Data management is probably the most important part of any modelling project
 - 1) TRUE.
 - 2) - FALSE.
- 9) The simulation grid is the definition of how we divide, or discretize, space in order to solve the differential equations numerically.
 - 1) TRUE.
 - 2) - FALSE.
- 10) Input for fault modelling generally comprises either fault sticks or mapped polygons
 - 1) TRUE.
 - 2) - FALSE.
- 11) The main reason to build a facies model is to condition the subsequent property model
 - 1) TRUE.
 - 2) - FALSE.
- 12) provide key mappable horizons and faults from which the structural framework of the model can be constructed.
 - 1) - Facies model
 - 2) - Composite Log
 - 3) Seismic data
 - 4) - Well data
- 13) are generally point source data from a non-regular 'grid' over the area of interest.
 - 1) - Facies model
 - 2) - Composite Log
 - 3) - Seismic data
 - 4) Well data





- 14) These data will form the 'basic input data' for reservoir modelling.
- 1) Composite Log
 - 2) Seismic data
 - 3) Well data
 - 4) NO ANSWER
- 15) The primary source for reservoir property data is the petrophysical interpretation of porosity and water saturation
- 1) Composite Log
 - 2) CPI Logs
 - 3) SCAL Data
 - 4) Well Test Data
- 16) can be used to determine effective permeability
- 1) Composite Log
 - 2) CPI Logs
 - 3) Well Test Data
 - 4) Fault sticks
- 17) is an area on the map where there is a gap in the surface interpretation.
- 1) Upscaling
 - 2) polygon
 - 3) fault sticks
 - 4) Structural model
- 18) the intersection line between a fault plane and a seismic section
- 1) Upscaling
 - 2) polygon
 - 3) fault sticks
 - 4) Structural model
- 19) is finding the single property value that best represents the heterogeneity of a group of cells in the fine-scale model to be used in a coarse-scale simulation grid.
- 1) Facies model
 - 2) Property modelling
 - 3) Structural model
 - 4) Conceptual Model
- 20) built from the depth-converted seismic horizons and fault data, generating a reservoir framework.
- 1) Facies model
 - 2) Property modelling
 - 3) Structural model
 - 4) Conceptual Model
- 21) captures the reservoir variability based on the sedimentological analysis of the core and wireline data
- 1) Facies model
 - 2) Property modelling
 - 3) Structural model
 - 4) Conceptual Model
- 22) is capturing the fine-scale distribution of porosity, permeability and water or hydrocarbon saturation
- 1) Facies model
 - 2) Property modelling
 - 3) Structural model
 - 4) Conceptual Model
- 23) About 50% of the modeling project schedule is spent on
- 1) Data management





- 2) - Property modelling
 - 3) - Structural model
 - 4) - Conceptual Model
- 24) in the oil and gas industry, reservoir modeling involves the construction of a computer model of a petroleum reservoir
- 1) TRUE.
 - 2) - FALSE.
- 25) All are Primary motives of building a model except
- 1) Visualization
 - 2) - Well planning.
 - 3) - Reservoir simulation
 - 4) - Volumetric estimates
- 26) the secondary motives of building a model are
- 1) Visualization and Consistency of data
 - 2) - Reservoir simulation.
 - 3) - Field performance prediction
 - 4) - Volumetric estimates.
- 27) Interpretation of Sedimentary Environments is important due to
- 1) - determin variety in porosity and permeability heterogeneity
 - 2) - detect stratigraphic traps
 - 3) - predicate reservoir compartments
 - 4) all answer are correct
- 28) goal of geologic reservoir characterisations is tor predict rock property variations in
- 1) - X and Y
 - 2) X. Y and Z
 - 3) - X and Z
 - 4) - Y and Z
- 29) Blocking of wells is the term used for the process of upscaling from geological grid scale to the log scale
- 1) TRUE.
 - 2) - FALSE.
- 30) the measure of how easily fluid moves through rocks
- 1) permeability
 - 2) - porosity
 - 3) - sorting
 - 4) - all answer are correct
- 31) Where and why discontinuities and fracture occur
- 1) Geomechanics
 - 2) - Geomorphology
 - 3) - Geostatstics
 - 4) - No Answer
- 32) Depending on the distribution of facies, the modeller has no choice of using pixel-based or object-based methods
- 1) - TRUE.
 - 2) FALSE.
- 33) There are different ways to build a 3D grid in Petrel.
- 1) TRUE.
 - 2) - FALSE.
- 34) is the classical, more manual way of building a 3D grid.
- 1) - symmetrical gridding





- 2) corner point gridding
- 3) no answer
- 35) the modelling process steps are
- 1) all answer
- 2) fault modelling and pillar gridding
- 3) make horizon and zones
- 4) no answer
- 36) Quantitative tools to create 3D geological models of the subsurface, including properties like
- 1) permeability.
- 2) grain size
- 3) porosity
- 4) All answers
- 37) Any property of the geological subsurface that exhibits spatial variability and can be measured in terms of real numerical values
- 1) Variable
- 2) Spatial Variation
- 3) Geologic model
- 4) No Answer
- 38) Typically the subsurface is anisotropic, spatially complex and sedimentary bodies are internally heterogeneous
- 1) Variable
- 2) Spatial Variation
- 3) Geologic model
- 4) No Answer
- 39) Subsurface (inter-well) heterogeneity can be measured
- 1) TRUE.
- 2) FALSE.
- 40) large support, low resolution data
- 1) seismic data
- 2) well data
- 3) Both of them
- 4) Non of them
- 41) small support, high resolution data
- 1) seismic data
- 2) well data
- 3) Both of them
- 4) Non of them
- 42) Special core analysis
- 1) SCAL
- 2) CAS
- 3) Both of them
- 4) Non of them
- 43) About 50% of the modeling project schedule is spent on Data management
- 1) TRUE.
- 2) FALSE.
- 44) All are elements of the geological model except
- 1) Bounding surfaces
- 2) Distributions of physical properties between surfaces
- 3) Rock typing for each environment





- 4) - Conditioned to well data
- 45) The deterministic model contains no random components; consequently, each component and input is determined exactly
- 1) TRUE.
 - 2) FALSE.
- 46) generation of hypothetical data (realizations) from a statistical model by feeding it (pseudo)random input values
- 1) Stochastic
 - 2) Deterministic
 - 3) Stochastic + random
 - 4) No answer
- 47) Geological modeling software is a worst-case scenario because
- 1) Designed by statisticians who know little about geology
 - 2) Applied by geologists / engineers who know little about statistics
 - 3) Both of them
 - 4) Non of them
- 48) Common errors in numerical reservoir models
- 1) Discretisation errors
 - 2) Upscaling errors
 - 3) Input errors
 - 4) All answers
- 49) Application of available technology and knowledge to a reservoir system in order to control operation and maximise recovery
- 1) Reservoir management
 - 2) Reservoir modeling
 - 3) Reservoir simulation
 - 4) All answers
- 50) the definition of how we divide, or discretize, space in order to solve the differential equations numerically.
- 1) grid
 - 2) cell
 - 3) model
 - 4) no answer

