



قائمة الاسئلة

امتحان نهاية الفصل الدراسي الأول - للعام الجامعي 1446 هـ - كلية البترول والموارد الطبيعية :: نمذجة ومحاكاة المكنن - (PNGE445) - الم
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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 to predict rock property variations in
1) - X and Y
2) X. Y and Z
3) - X and Z
4) - Y and Z
- 29) the percentage of pore volume or void space that can contain fluid
1) - permeability
2) porosity
3) - sorting
4) - all answer are correct
- 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) Total saturation is always 100%
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) Simulations of multi-phase flow
- 1) - static model
 - 2) dynamic model
 - 3) - Both of them
 - 4) - Non of them
- 43) Simulations of multi-phase flow require high-quality dynamic reservoir models
- 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

