



قائمة الاسئلة

امتحان نهاية الفصل الدراسي الأول - للعام الجامعي 1446 هـ - كلية البترول والموارد الطبيعية :: جيولوجيا البترول - (GEOS324) - المستوى ا.د. عادل محمد المطري

- 1) The humic refers to the decomposition and polymerization products of fatty, lipid organic materials such as spores and planktonic algae deposited in subaquatic mud
  - 1) - TRUE.
  - 2)  FALSE.
- 2) An increase in the minor elements in the composition of petroleum lowers the value of crude.
  - 1)  TRUE.
  - 2) - FALSE.
- 3) Alkanes are open-chain with single bonds between the carbon atoms; whereas arenes are hydrocarbons with one or more benzene rings
  - 1)  TRUE.
  - 2) - FALSE.
- 4) "The presence of huge quantities of hydrocarbon gases around the earth and other planets" is one of the factors that inorganic theories are based on.
  - 1)  TRUE.
  - 2) - FALSE.
- 5) Kerogen: It is a fine-grained, generally amorphous non-organic matter found principally in argillaceous sediments, such as clays
  - 1) - TRUE.
  - 2)  FALSE.
- 6) Lipids: encompasses fatty substances such as vegetable oil, waxes and animal fats. They are structurally very similar to the aromatic NSO compounds
  - 1) - TRUE.
  - 2)  FALSE.
- 7) Absolute Porosity is the total porosity of the rock, if the pores are connected
  - 1) - TRUE.
  - 2)  FALSE.
- 8) The three primary factors influencing the amount of organic matter in a sedimentary rock are productivity, preservation, and oxidation
  - 1) - TRUE.
  - 2)  FALSE.
- 9) Paraffin or Alkanes: are saturated hydrocarbons with a general formula ( $C_n H_{2n+2}$ ), for values  $n > 5$  they are gaseous at standard T and P
  - 1) - TRUE.
  - 2)  FALSE.
- 10) A potential source rock is one that is too mature to generate petroleum in its natural setting but will form significant quantities of petroleum when heated in the laboratory or during deep burial.
  - 1) - TRUE.
  - 2)  FALSE.
- 11) Oil or gas will generally move upward along permeable carrier beds to the earth's surface except where they encounter an impermeability barrier
  - 1)  TRUE.
  - 2) - FALSE.
- 12) If the S1 of a sample is 0.16 mg/g and its S2 value is 4.6mg/g so its production index (PI) should be 0.03
  - 1)  TRUE.
  - 2) - FALSE.
- 13) Lacustrine and marine organic matter have much higher petroleum potential than terrestrial organic matter





- 1)  TRUE.
  - 2)  FALSE.
- 14) The order of the products of crude oil distillation is
- 1)  kerosene, gasoline, diesel fuel, heavy gas oil, lubricating oil and residuum
  - 2)  Gasoline, diesel fuel, kerosene, heavy gas oil, lubricating oil and residuum
  - 3)  the products does not have order and may vary according to the type of distiller method
  - 4)  None
- 15) The three primary factors influencing the amount of organic matter in sedimentary rocks are
- 1)  Grain size, sedimentation rate, and oxidation/reduction
  - 2)  Productivity, sedimentation rate, and dilution
  - 3)  Productivity, preservation, and dilution
  - 4)  All ANSWERS
- 16)  $C_n H_{2n}$  is the chemical formula of the following
- 1)  Paraffin's or Alkenes
  - 2)  Naphthenes or cyclic Alkanes
  - 3)  Aromatic or Resins
  - 4)  Paraffin's
- 17) API is a parameter that indicates
- 1)  the type of kerogen
  - 2)  the type of petroleum compounds
  - 3)  the specific gravity of crude oils
  - 4)  the price value of crude oils
- 18) An oil sample with the following compositions: 60% Alkanes, 20% cycloalkanes and 20% arenes; the oil is:
- 1)  heavy and has high price value
  - 2)  heavy and has low price value
  - 3)  light and has low price value
  - 4)  light and has high price value
- 19) The formation gas-oil ratio is
- 1)  The ratio that must be applied to a barrel of reservoir oil to convert it into an equivalent amount of stock tank oil.
  - 2)  The ratio of gas content to the oil content per barrel of oil as found in the reservoir
  - 3)  The ratio that must be applied to a barrel of oil to convert it into an equivalent amount of gas
  - 4)  All ANSWERS
- 20) The thermal alteration index color of the oil generative zone will be
- 1)  BROWN
  - 2)  YELLOW
  - 3)  GOLDEN BROWN THROUGH BROWN
  - 4)  GOLDEN BROWN
- 21) The higher the RO value of organic matter, the higher the
- 1)  productivity
  - 2)  maturity
  - 3)  generation
  - 4)  quality
- 22) The following features are used in describing a reservoir except
- 1)  Type of the reservoir rock comprising the reservoir
  - 2)  Relationship between the reservoir and the surrounding impermeable rocks
  - 3)  The productivity of OM
  - 4)  Reservoir capacity





- 5) - Depositional environment
- 23) OPEC is:
- 1) - Organization of petroleum producing countries formed in 1960
  - 2) - Organization of petroleum producing and exporting countries formed in Baghdad in 1960
  - 3) + Organization of oil exporting countries formed in 1960
  - 4) - None
- 24) Inorganic theories (Abiogenic) include the following theories except
- 1) - Cosmic theory
  - 2) - Alkali metal theory
  - 3) + Hydrothermal theory
  - 4) - Chemical theory
  - 5) - Magmatic theory
- 25) The ability of fluid to pass through a porous material or the property that permit the passage of fluid through the interconnected pores of a rock is
- 1) - porosity
  - 2) - absolute porosity
  - 3) + permeability or effective porosity
  - 4) - All ANSWERS
- 26) A biogenic theory of petroleum origin explains that
- 1) + petroleum originate from the decomposition of organic matter
  - 2) - petroleum originate the hydrocarbon gases around the earth and other planets
  - 3) - the emanation of hydrocarbon gases while volcanic eruption
  - 4) - 99% of petroleum deposits in nature are found within sedimentary rocks
- 27) The viscosity of the crude is affected as follow
- 1) + Decrease with increasing temperature
  - 2) - Increase with increasing the amount of gas dissolved in crude oil
  - 3) - does not affected by the change in temperature
  - 4) - None
- 28) The stage of petroleum generation commences
- 1) - the end of diagenesis of organic matter
  - 2) - the beginning of the metagenesis of organic matter
  - 3) + during the catagenesis stage of organic matter
  - 4) - at all stage of organic matter diagenesis
- 29) Which of kerogen types is the best to generate oil?
- 1) + Type I
  - 2) - Type II
  - 3) - Type III
  - 4) - All kerogen types
- 30) The presence of ductile materials and the increasing of grain sorting make the rock
- 1) + has high porosity and low permeability
  - 2) - has high permeability and low porosity
  - 3) - has low porosity
  - 4) - has high porosity
- 31) When a single fluid phase completely saturates the pore space. This property of the reservoir is called
- 1) - Porosity
  - 2) - Specific permeability
  - 3) + Absolute Permeability
  - 4) - None
  - 5) - Relative Permeability





- 32) The characteristic that allows rock to hold fluid and gas is known as:
- 1) - virtuosity
  - 2) - capacity
  - 3)  porosity
  - 4) - elasticity
- 33) Exploration and Drilling Off-shore rigs include:
- 1) - Semi-submersible platform
  - 2) - Drill ships
  - 3) - Jack up platform
  - 4)  None
- 34) Hoisting system consist all of the following except
- 1) - Draw works
  - 2) - crown Block
  - 3)  Kelly
  - 4) - Traveling Block
- 35) Rotating system consist of the following parts except
- 1) - rotary table
  - 2) - Kelly
  - 3) - Drilling assembly
  - 4)  a drilling line
- 36) Pore pressure that is exerted by fluids contained in the pore space of the rock is generally referred to
- 1) - Lithostatic pressure
  - 2)  Formation pressure
  - 3) - All ANSWERS
  - 4) - None
- 37) Avenues in rock through which oil and gas moves from source rock to trap.
- 1)  migration route
  - 2) - migration
  - 3) - immagration
  - 4) - no answer
- 38) Porosity and permeability versus depth of burial
- 1)  Porosity and permeability of the uncompacted rocks decreases, and density increases with depth
  - 2) - Porosity and permeability of the uncompacted rocks increases, and density increases with depth
  - 3) - Porosity and permeability of the uncompacted rocks decreases, and density decrease with depth
  - 4) - Porosity and permeability of the uncompacted rocks increases, and density decreases with depth
- 39) During gas cap drive mechanism to produce oil, the ratio of gas to oil increases as drop in pressure occur, and the recovery factor is
- 1) - 0.1
  - 2)  0.15
  - 3) - 0.25
  - 4) - May reach 50%
- 40) The cumulative vertical thickness of a reservoir from which petroleum may be produced is called
- 1) - The gross pay
  - 2)  The Net pay
  - 3) - The closure





- 4) - The spill plane
- 41) The deepest level of producible gas is called
- 1) - OWC
  - 2)  GWC
  - 3) - WGC
  - 4) - OGC
- 42) The traps whose geometry was formed by post-depositional tectonic modification of the reservoir rocks are called
- 1)  Structural traps
  - 2) - Stratigraphic traps
  - 3) - Diaperic traps
  - 4) - Combination traps
- 43) Traps formed due to stratigraphic and structural processes
- 1)  Pinchout traps
  - 2) - truncation traps
  - 3) - channel traps
  - 4) - no answer
- 44) Abnormally low heat flow occurs along
- 1) - mid ocean ridges
  - 2) - intracratonic rifts
  - 3)  continental margins
  - 4) - All of the above
- 45) The traps that are caused due to the upward movement of sediments are called
- 1) - Structural traps
  - 2) - Stratigraphic traps
  - 3)  Diaperic traps
  - 4) - Combination traps
- 46) Traps that occurs above unconformity are called
- 1)  Traps associated with unconformities
  - 2) - Traps unassociated with unconformities
  - 3) - Reefs (Carbonate buildups)
  - 4) - No answer
- 47) Waters that have been buried in a closed hydraulic system and have not form as part of the hydraulic cycle for a long time are
- 1) - Meteoric water
  - 2)  Connate water
  - 3) - Juvenile waters
  - 4) - Mixed waters
- 48) A crude oil with less than 15 API when examined under UV, its color of fluorescence will be
- 1)  Brown
  - 2) - Orange
  - 3) - Blue- White
  - 4) - Blue- White to Vieolet
- 49) A hypothetical geological framework that contains all the elements necessary to find petroleum
- 1) - traps
  - 2) - prospect
  - 3)  play
  - 4) - reservoir
- 50) Consist of the following parts -rotary table, Kelly, Drilling assembly





- 1) - Circulation system
- 2) - Hoisting system
- 3) + Rotary system
- 4) - BOP system