I- **Complete** the following: -   (20 pts)

1- A fold with the hinge line is not horizontal is called: ….......................
2- In oblique-slip faults, the net slip is equal to ………………………….
3- A fold that closes sideways (right or left) is called: …....……..……
4- An oval folded structure with the oldest strata in the core is termed: ……………………………………………………………………………
5- The trend of north Sinai fold belt is: …………………………………..
6- A fold in which both limbs dip in the same direction: ………………...
7- A reverse fault has more ……….. and lesser……….. than the thrust.
8- Folds are considered to be close if they display interlimb angles ranging from: …………………………………………………………..
9- Young rocks surrounded old in the rule of: …………………………..
10- If sigma-1 and sigma-2 is horizontal, we expect to have ……… fault.

II- **Compare** with **drawing** between the following: (20 pts)

a- Horst and graben

b- Normal fault and reverse fault

c- Volume strain and shear strain.

d- Angular unconformity and disconformity

III- **Write** with **drawing** on the following: (30 pts)

a- Fault-propagation folding (FPF) and Fault-bend Folding (FBF)

b- Ramsey classification of folds.

VI- Match **TEN** words only from column (A) with column (B): **(30 pts)**

Column (A)	Column (B)
1- Detachment fold	- Recumbent fold
2- Plunge	- Unconformity criteria
3- Planar structure	- Law of superposition
4- Horizontal displacement	- North Sinai fold belts
5- Limbs	- Deformation
6- Isoclinal	- Fault Criteria
7- Thrust fault	- Strike-slip fault
8- Syrian Arc System	- No ramp
9- Basal conglomerate	- Fault plane
10-Slickenlines	- Parallel limbs
	- Fold hinge line
	- Low angle reverse fault
	- Two sides of a fold

Good Luck!

Examiners	Prof. Mohamed Atef Noweir	Prof. Mohamed Abdel Wahed

Answer the following questions:

1) Write on the following: (30 marks)
   a) Factors affecting the physical properties of reservoir rocks.
   b) Extracting Archie equation.
   c) Thermal conductivity minerals classes.

2) Discus the following relations: (33 marks)
   a) Porosity- seismic wave velocity.
   b) Bulk density- porosity.
   c) Capillary pressure- water saturation.

3) Write on the following: (22 marks)
   a) Reservoir quality index and flow zone index.
   b) Relationships between porosity and permeability for different reservoirs.

4) Complete the following statements: (20 marks)
   a) Geological classification of permeability classified into: 1. ....
   2. ....
   b) Porosity is defined as ....
   c) Rock wettability is classified into: 1...
   2. ....   3. ....
   d) The resistivity of rocks depends on the factors: 1. ....
   2. .... 3. ....
   e) Factors affecting relative and effective permeabilities are: 1. ....
   2. .... 3. ....

5) Discuss the following:
   a) Types of magnetization. (10 marks)
   b) Necessity of standardization of rock samples for magnetic fabric studies. (10 marks)
   c) Using magnetic fabric technique for 3D imaging of sedimentary rock fabrics. (15 marks)

6) Put (√) or (x) and correct the wrong sentence: (10 marks)
   a) Magnetic fabric studies is based on the induced magnetization. ( )
   b) Magnetic grain fabric of a sedimentary rock depends on its composition ( )
   c) AMS in a sedimentary rock reflects its overall preferred grain-pore orientation ( )
   d) Secondary magnetic fabric of sedimentary rocks is characterized by a weak anisotropy. ( )
   e) Pore magnetic fabric helps in defining the maximum permeability direction. ( )

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