



University Of Technology
Building and Construction Eng. Dept.
Final Exam - First Attempt- 2014-2015



Subject : Digital mapping
Branch : Geomatic engineering

Class: 2nd Class
Time: 3 hours
Date: / /2015

NOTE: Answer Four Questions only

Q1) (25 Marks)

- a) Find the cartographic accuracy of maps $\frac{1}{25000}$, $\frac{1}{50000}$, $\frac{1}{100000}$, $\frac{1}{200000}$, $\frac{1}{250000}$.
- b) Find the geodetic dimensions of maps , $\frac{1}{250000}$, $\frac{1}{100000}$, $\frac{1}{50000}$, $\frac{1}{25000}$, $\frac{1}{500000}$, $\frac{1}{1000000}$.
- c) Find the number of maps which scales as follows $\frac{1}{500000}$, $\frac{1}{250000}$, $\frac{1}{100000}$, $\frac{1}{50000}$, $\frac{1}{25000}$, that contains in one map scale $\frac{1}{1000000}$.

Q2) (25 Marks)

- a) Draw U.T.M scale Factor distribution values at one zone.
- b) List the main differences between N and P images.
- c) List the main differences between contact and camera.
- d) what are the dimensions of UTM grid squares on map $\frac{1}{25000}$, $\frac{1}{50000}$, $\frac{1}{100000}$ (Draw the relationship between them).

Q3) (25 Marks)

- a) Draw the zones which pass through Iraq territory and sign all element at one zone.
- b) In topographic map below find the following: map scale , U.T.M grid coordinates of points (O,P,S) , length of FR, contour interval on a map.
- c) Define : mirror reading , halftone-printing , offset, map, double linear scale.

Q4) (25 Marks)

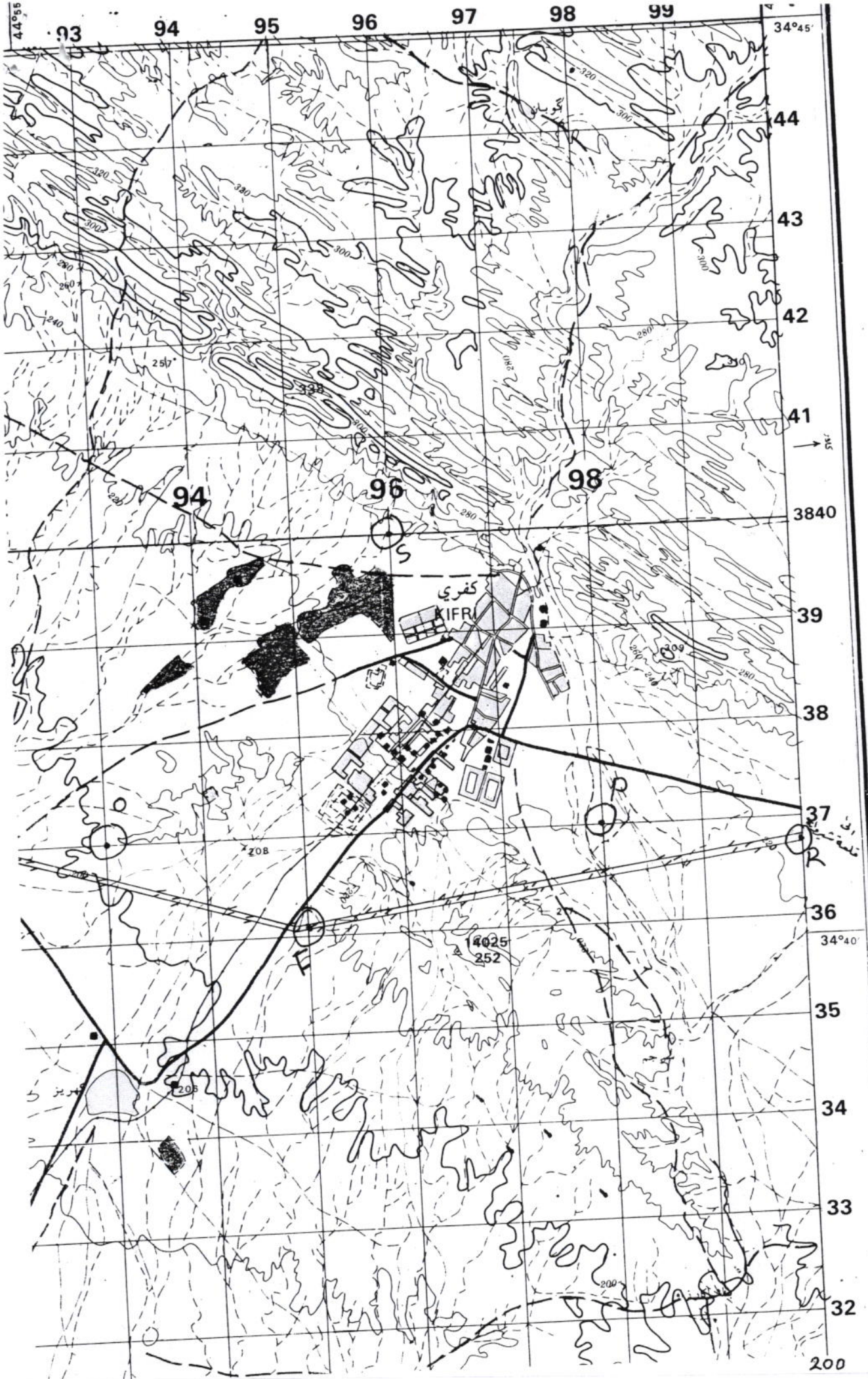
- a) List methods of representation relief on maps and explain shading method .
- b) explain method of squares to compute the area of irregular shape on a map and give a numerical example.
- c) List methods of Transformation coordinate in a plane between two coordinate systems when the origin in both systems is fixed and draw each case.

Q5) (25 Marks)

- a) Compute the geodetic distance between A and B if :
 $\varphi_A = 22^\circ 10' 15''$ $\lambda_A = 38^\circ 20' 45''$
 $\varphi_B = 28^\circ 15' 15''$ $\lambda_B = 42^\circ 30' 30''$

- b) List with short explanation steps of Digital map production.

(Good Luck)



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(1) اهرية عرود (2)

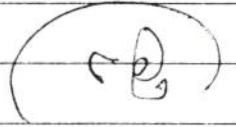
Q. a) $1/25000 \Rightarrow 1 \text{ cm} = 250 \text{ m} \Rightarrow 1 \text{ mm} = 25 \text{ m} \Rightarrow 0.1 \text{ mm} = 2.5 \text{ m} \Rightarrow 0.2 \text{ mm} = 5 \text{ m}$

$1/50000 \Rightarrow 0.2 \text{ mm} = 10 \text{ m}$

$1/100000 \Rightarrow 0.2 \text{ mm} = 20 \text{ m}$

$1/200000 \Rightarrow 0.2 \text{ mm} = 40 \text{ m}$

$1/250000 \Rightarrow 0.2 \text{ mm} = 50 \text{ m}$



Q. b) The geodetic dimensions are:

$1/250000 \Rightarrow$ $30' \times 1'$

$1/100000 \Rightarrow 30' \times 30'$

$1/50000 \Rightarrow 15' \times 15'$

$1/25000 \Rightarrow 7'30'' \times 7'30''$

$1/50000 \Rightarrow$ $3^\circ \times 2^\circ$

$1/100000 \Rightarrow$ $6^\circ \times 4^\circ$



Q. c) The number of Maps that Contains in map scale $\frac{1}{100000}$ from scales:

$1/500000$ is 4 maps

$1/250000$ is 16 maps

$1/100000$ is 96 maps

$1/50000$ is 384 maps

$1/25000$ is 1536 maps

