RIET | RAJASTHAN INSTITUTE OF ENGINEERING & TECHNOLOGY
Approved by AICTE & Affiliated to Rajasthan Technical University

I Mid Term examination
Session: 2017-18
B.Tech I Year (II Semester) **SET -B**
Subject with code: Engineering Chemistry (CE-103)

Time: 2hrs. M.M.:20

Instruction for students:

Question paper contains two sections--

Sec A- compulsory (which includes 8 short answers type questions of 0.5 marks each).

Sec B- contains 06 Questions out of which any 04 questions to be attempt by the student (4 marks each).

Sec-A

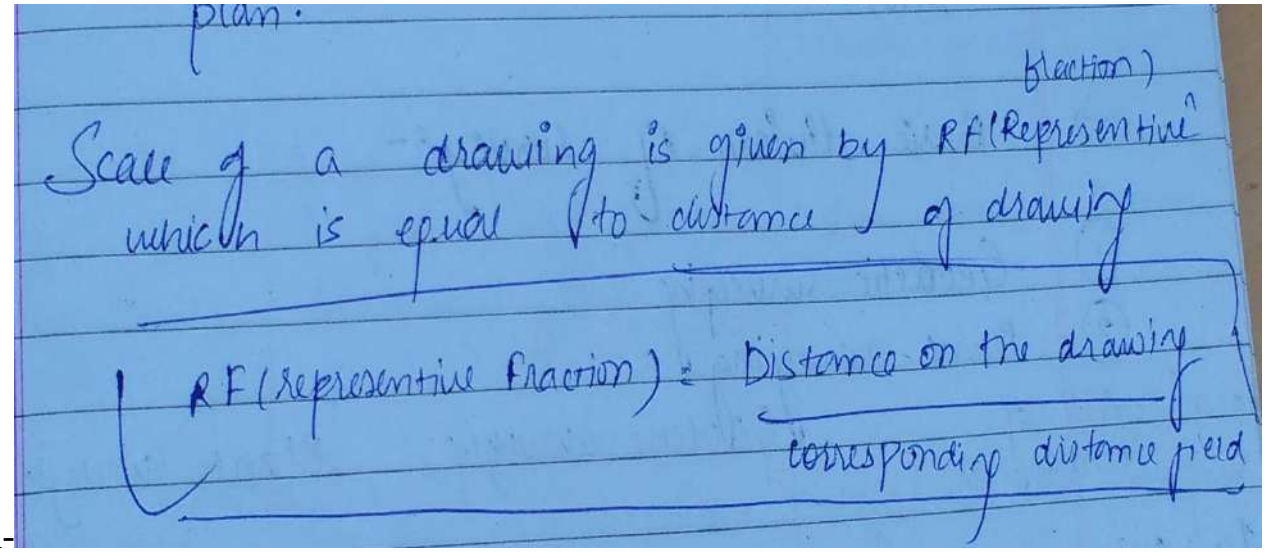
Q.1 Answer the following questions

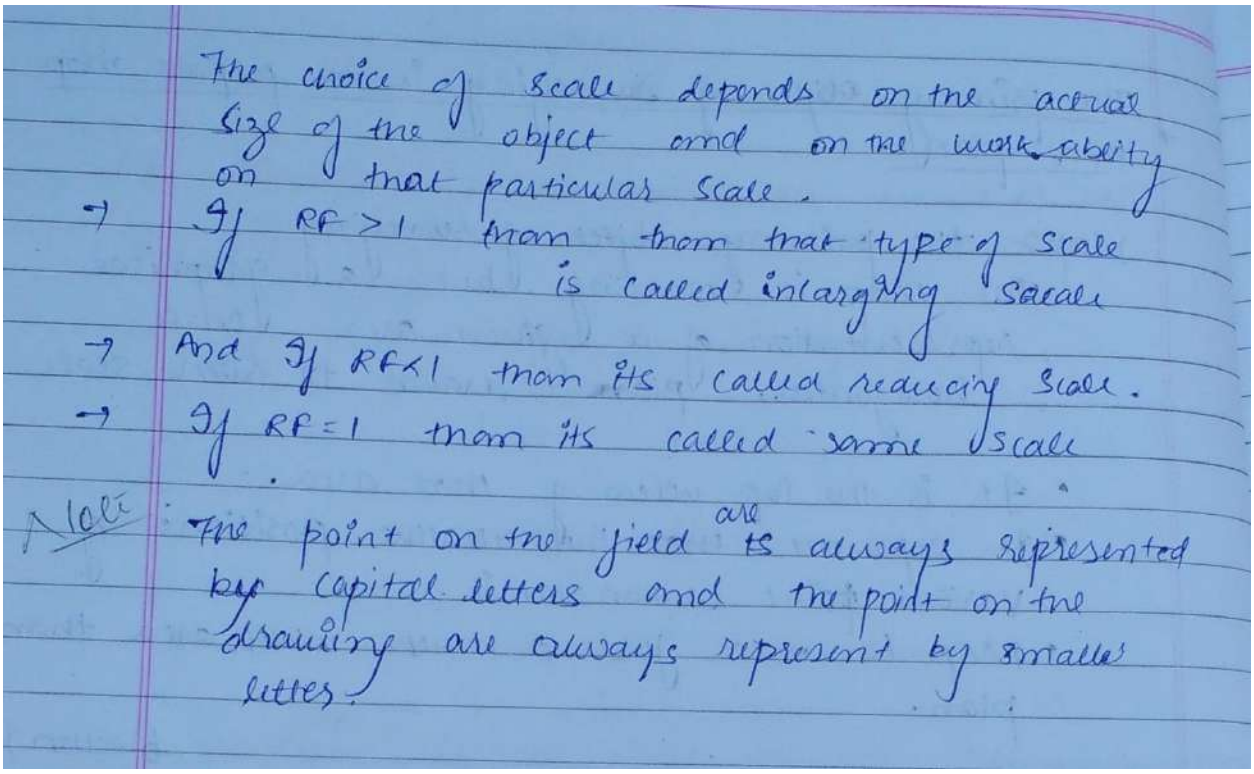
(a) What do you mean by passive responsibility of an engineer?

Sol- The responsibility of an engineer after the completion of his work and during the liability period of his work is called passive responsibility.

(b) Define R.F.

Sol-





(c) What do you mean by reducing scale?
Sol-The scale in which objects are drawn to a smaller size on paper as compared to their actual size
(d) Which branch of civil engineering deals with the design of foundation of buildings?
Sol- Foundation Engineering (Geotechnical Engineering)
(e) What is the primary objective of surveying?
Sol-To prepare map or plan.
(f) Which duty of civil engineer holds the paramount position?
Sol- Public safety
(g) According to A.S.I the limiting area of geodetic surveying is -------?
Sol-260 sq. kms
(h) National waterway 1 (NW-1) is from…..?
Sol-Allahabad to Haldiya

Sec-B

Q.2 Explain the various duties of a civil engineer.

Sol-

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The responsibility of a civil engineer can be broadly classify as three subdivison depending upon the liablity time of his work :-

(1) Before comencement of work.
(2) During the work or construction
(3) After the ~~commencement~~ completion of the work of construction.

The responsibility of a civil engineer during the tenure of ~~office~~ work is often termed as active responsibility and the responsibility of the civil engineer after the completion of the work during the liability period (defect liability period and service liab. period) is often term as passive responsibility

incompliance

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(5) civil engineering profession recogonize the reality of limiting natural resources that dezire for sustainable, practices and the need for the social equity in the consumption of resources.

(6) The basic responsiblity of a civil engineer are planing and designing and making a feature and analysis of its various acceptect, making a regular inspection in the site to insure that the construction is goining into the plan and making the necessary amendments in the project if requiried during the course of construction.

(7) Civil eng engineering as to make sure that the project is the cost effective and structure is of required strength and posses and adequate amount of safty.

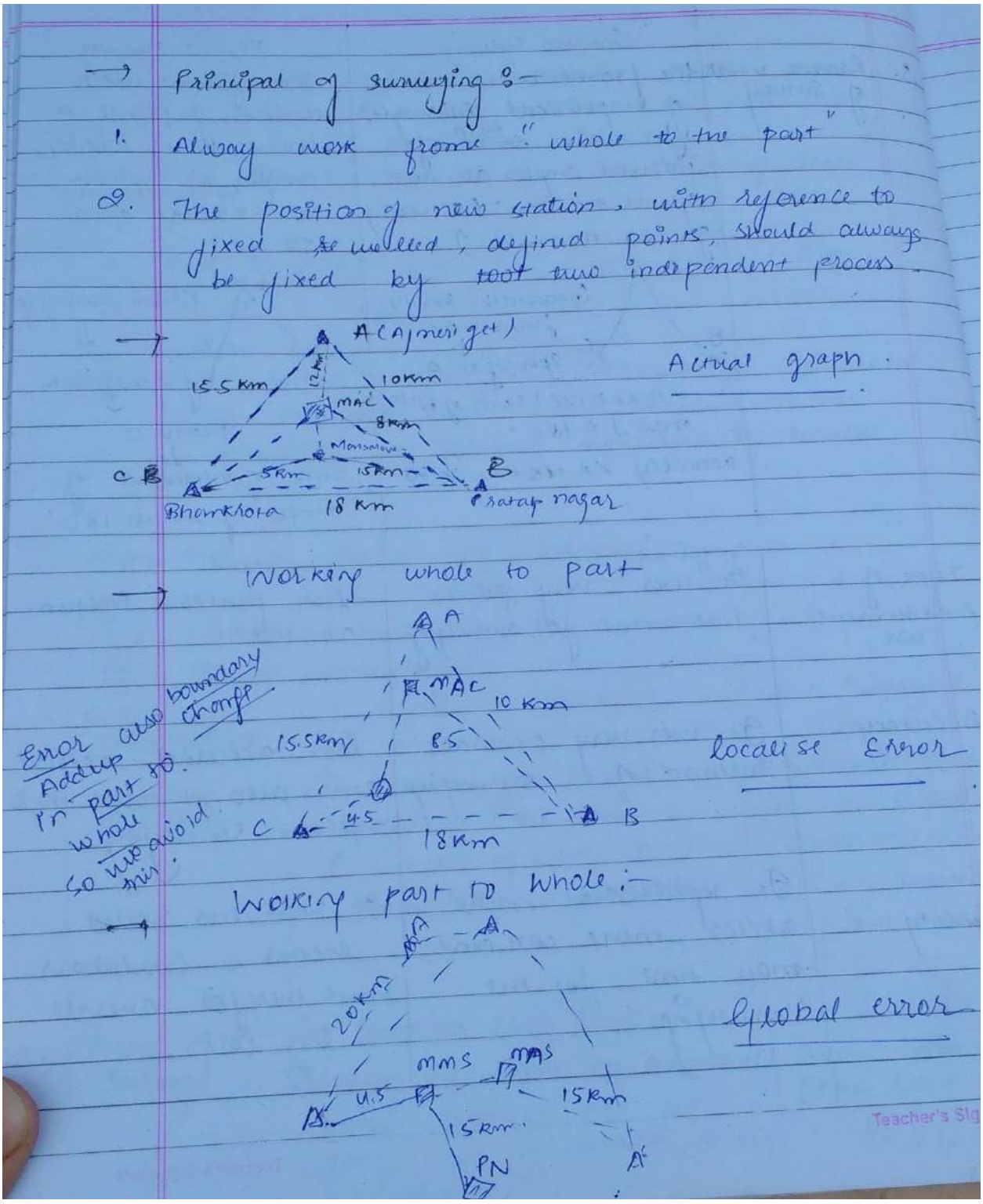
(8) Civil engineers hold the health, safty and wealthfare and safty para of public paremeter.

(9) Civil engineering has to ensure that is the project is incompliance with.

(10) Its a beauty of civil engineers to b insure, that the structure they are building are build economically to function properly with a minimum of maintaince and repair while withstand dishonest diff anticipitent uses and advance whether condition.

Teacher's Signature

Q.3 What are the basic principles of surveying. Explain each of them.
Sol-

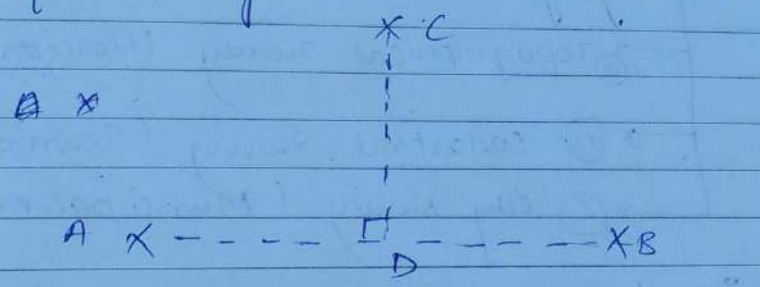


By working from 'whole to the part' we mean that the given area is first inclosed in larger frame work of control points which are measured with very precies instrument and with great aquarcy, it is then subdivided into smaller parts and the measurement for dyjent object are taken this insure that

(1) the accumulation of error will not be there and errors will be minimum.

(2) the error will be localize therefore can be detected easily and corrected accordingly.

let A and B are two fixed well defined point and position of C is to be obtained.



then the various processes by which C can be fixed are following :-

(1) $\bar{AC}$, $\bar{BC}$
(2) $\angle CAB$, $\angle CBA$
(3) $\angle CAB$, $\bar{BC}$
(4) $\angle CAB$, $\bar{BC}$
(5) $\angle CBA$, $\bar{AC}$
(6) $\angle CBA$, $\bar{BC}$
(7) $\bar{AD}$, $\bar{CD}$
(8) $\bar{CD}$, $\bar{DB}$
(9) $\bar{AD}$, $\bar{AC}$

Teacher's Signature

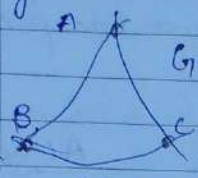
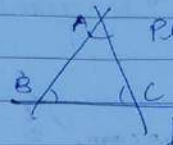
Q.4 Differentiate between plane and geodetic surveying.

Sol-

→ Basic division of Survey:-

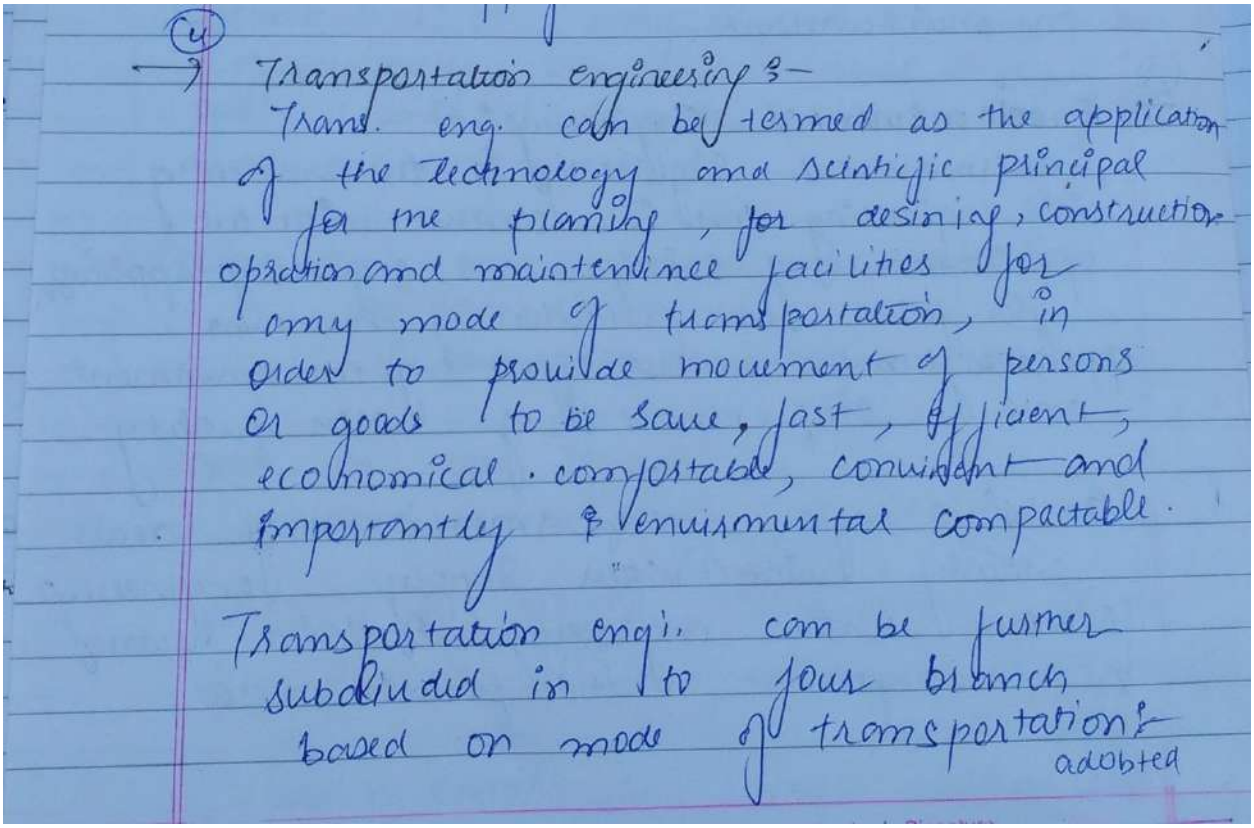
(1) Geodetic surveying
(2) Plane Surveying

S.NO	Point of comparison	Geodetic Surveying	Plane Surveying
1.	curvature of earth	It accounts for curved shape of the earth (curvature of earth is taken into consideration)	Curvature of earth is not taken into account (the area is considered as a plane area
2.	Area of Survey	It involves larg area under Survey (according to americal survey institute ASI the limiting area of geodetic survey is 260 km^2.	It involves small area under Survey (area less than equal to 260 km^2

	Geodetic Survey	Plane Survey
3. Frame work of Survey	the frame work consist spherical triangles for which sum of internal angles are not equal to 180°. (actually greater than 180°)  Geodaetic survey frame work ↓ spherical Δ ↓ $\angle A + \angle B + \angle C$ [sum of interior angle] $\neq 180°$. actually $\angle A + \angle B + \angle C > 180$	The frame work consist of plane Δ the sum of interior angles of which internal angle is exactly equal to 180.  Plane surveying ↓ frame work ↓ plane Δ ↓ Sum of interior Δ of angle of which 180°
4. Type of instrument use	In this we It uses very precies instrument for surveying	less precies instrum. are use
5. Accuracy	It uses very accurate method of surveying	less accurate method can also be used in plane surveying
Feasibility	It requisedes more skiles, more cost and more time for the surveying.	It has less skilled labour, less labour and therefor overall less cost.

Q.5 Explain Transportation engineering in detail.

Sol-

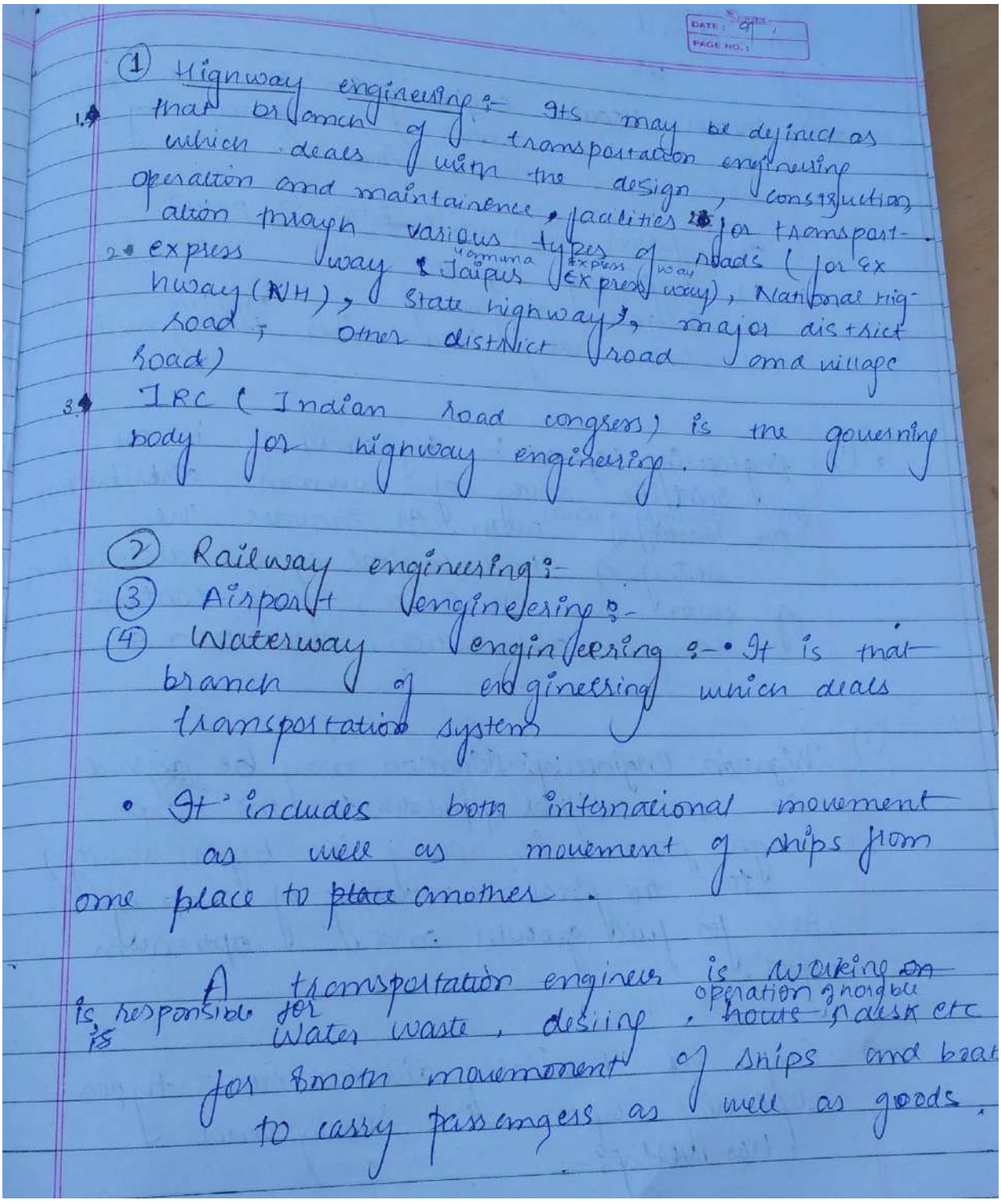


(4)

→ Transportation engineering :-

Trans. eng. can be termed as the application of the technology and scintific principal for the planing, for desining, construction operation and maintenance facilities for any mode of transportation, in order to provide movement of persons or goods to be save, fast, efficient, economical, comfortable, convinient and importantly environmental compactable.

Transportation engi. can be further subdivided in to four branch based on mode of transportation adopted :-



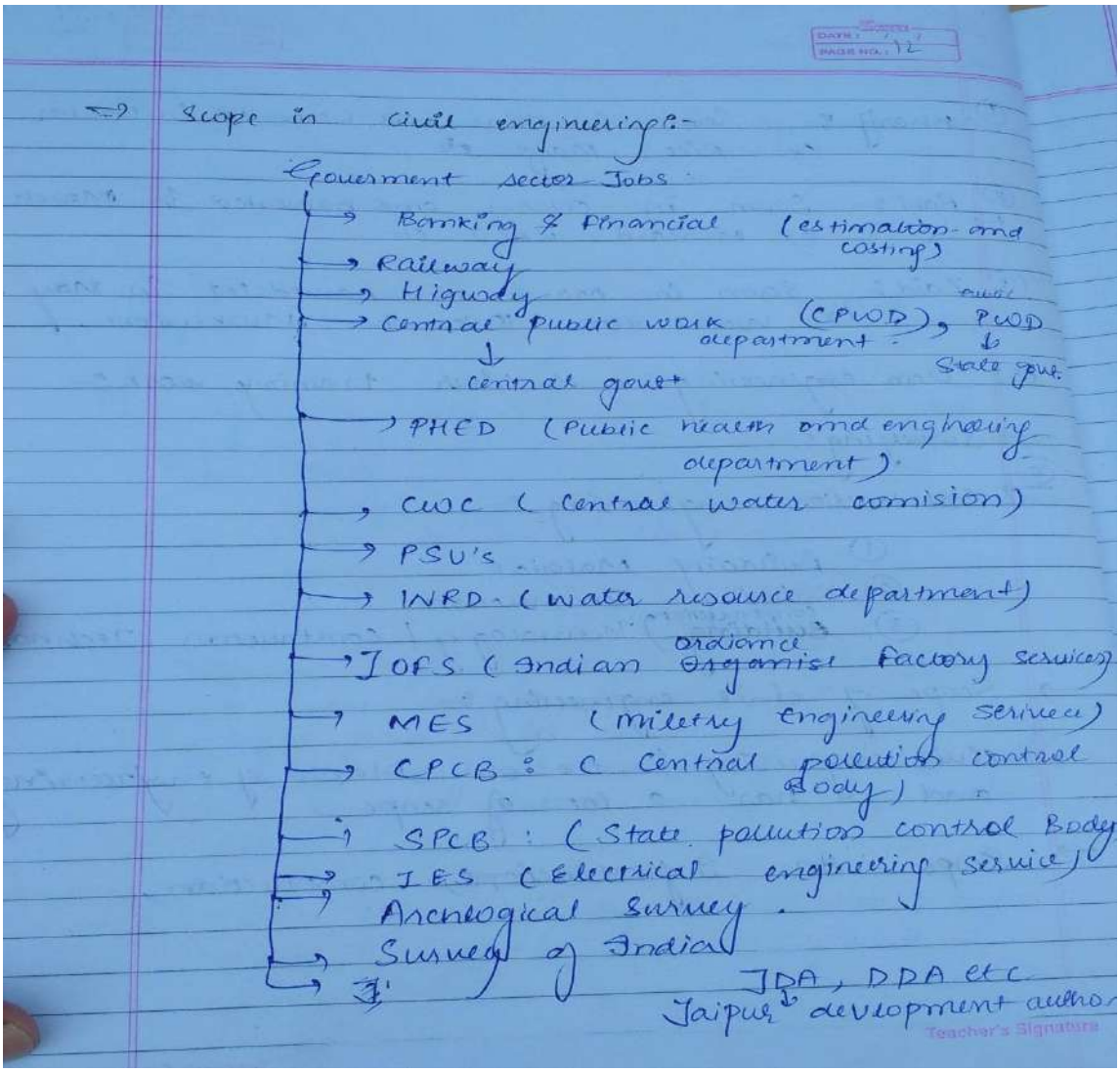
Q.6 Classify various types of survey based on the nature of survey field.

Sol- 1.Land Surveying

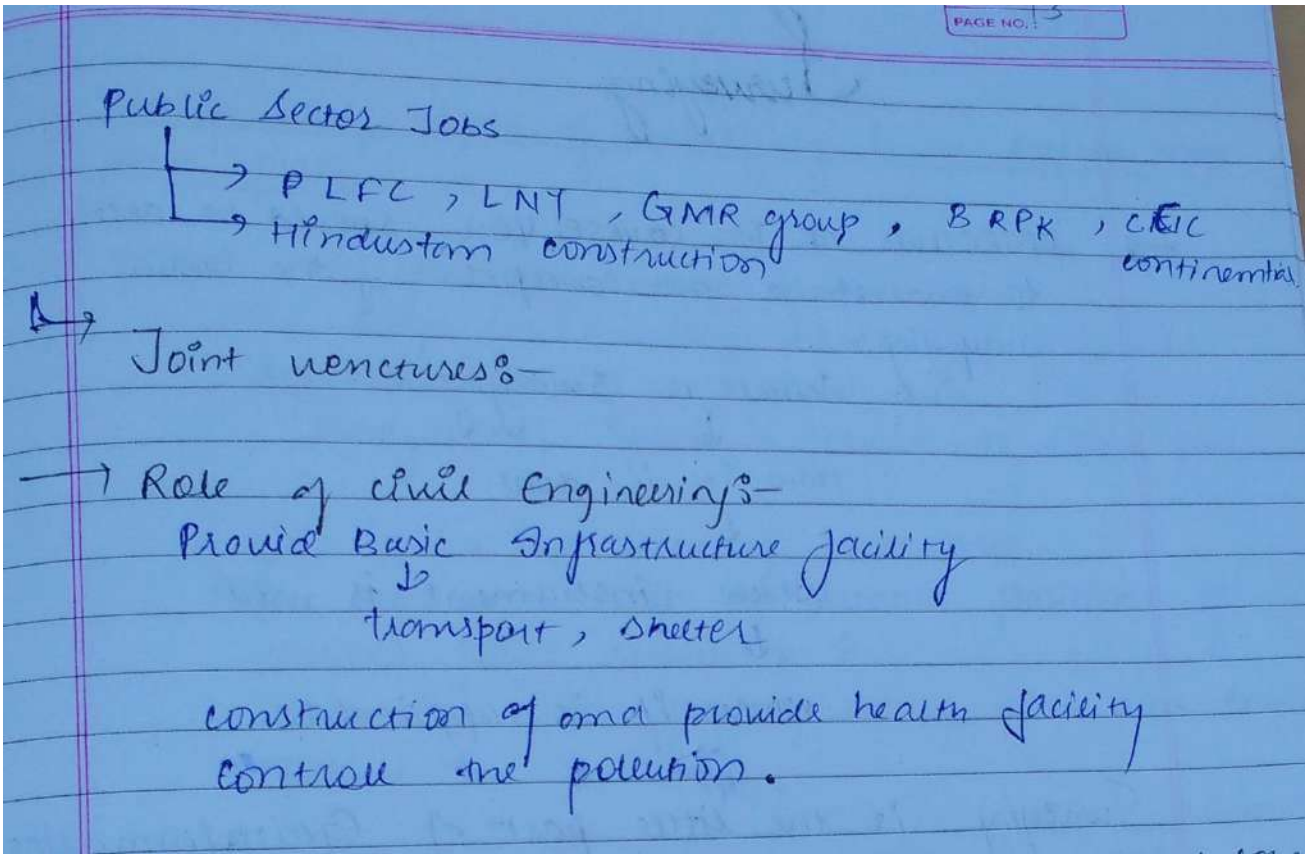
2 Marine or Hydrographic Surveying

3. Astronomical Surveying

Q.7 Give the scope of Civil Engineering.



Sol-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Public Sector Jobs
PLFC, LNT, GMR group, BRPK, CEC
Hindustan construction
continental
Joint ventures:-
Role of civil Engineering:-
Provide Basic Infrastructure facility
transport, Shelter
construction of and provide health facility
control the pollution.