GANPAT UNIVERSITY
M. Sc. Second Semester Examination (C.B.C.S) April-May, 2013
Subject: Geophysics
Paper: GPA 201 APG (Applied Geology)

Time: 3 hours

Total Marks: 70

Instructions:

1) Attempt any three questions from each section, of which question No. 4 and 8 are compulsory
2) Answer each section in separate answer book.

SECTION: I

Q-1	A) Explain Plate margins.	07
	B) Explain Indian occurrences of Coal.	07
Q-2	A) Porosity and Permeability in different type of rocks.	07
	B) Explain any three types of physical methods which are used in Mining Method.	07
Q-3	A) Explain Indian occurrences and uses of Aluminum Ore.	07
	B) Explain Migration and Source Rocks of oil and gas.	07
Q-4	1. What is sea floor spreading?	01
	2. Define confined and unconfined aquifers.	01
	3. Give the uses of iron ore.	01
	4. Name the structural traps.	01
	5. Give the engineering properties of rocks.	01
	6. Define the term mining geology.	01
	7. Name the NW sedimentary basin of India.	01

SECTION: II

Q-5	A) Discuss the types of Volcanoes.	07
	B) Petroleum Geology of Assam Basin.	07
Q-6	A) Distribution of Earthquakes.	07
	B) Petroleum Geology of K-G Basin.	07
Q-7	A) Describe geology of Gujarat.	07
	B) Discuss the rock types found in Archaean and Dharwar systems.	07
Q-8	1. Name important oil fields of Gujarat.	01
	2. Which major types of rocks found in Saurastra ?	01
	3. Give the tectonic divisions of Gujarat.	01
	4. Give the velocity of seismic waves in hard and soft rocks.	01
	5. Give the types of earthquakes.	01
	6. Give the name of the Volcanic Products.	01
	7. Which are the source rock, trap rock and reservoir rock in Bengal Basin?	01

--------END OF PAPER--------

GANPAT UNIVERSITY
M.Sc. Second Semester Examination May, 2013
Subject: Geophysics
Paper: GPA 202 Gravity and Magnetic Methods

Time: 3 hours

Total Marks: 70

Instructions:

1) Attempt any three questions from each section, of which question No. 4 and 8 are compulsory
2) Answer each section in separate answer book.

SECTION: I

Q-1 (a) State the principles of Gravity and Magnetic method? 07

(b) Describe the physical property used in magnetic survey. Explain how igneous 07 rocks possess more magnetism than sedimentary rocks?

Q-2 Discuss the magnetization of earth crust? How magnetization takes place in Dia, 14 Para and Ferro magnetic substances along with classification of ferromagnetic materials

Q-3 Discuss two hypothesis of isostasy? Define an expression for antiroot in Airy's 14 theory of isostasy. What will be antiroots in km if elevated height is 1km and average crustal density is $2.50 kg/m^3$?

Q-4 (1) Magnetic Field at equator compare to pole is more or less? 01

(2) Magnetic line of force is a continuous line or straight line or a broken line? 01

(3) Gravity Value will increase or decrease when we move from Pole to equator? 01

(4) Write the unit of Magnetic susceptibility or it is unitless? 01

(5) What is the unit of gravity anomaly? 01

(6) Whether Magnetic Field increases or decreases across a fault? 01

(7) Magnetic Field varies with $1/R^2$ or $1/R^3$? 01

SECTION: II

Q-5 What are gravity and magnetic signatures over three dimensions, two 07 dimensions and one dimensions geological structures of earth crust? Support 07 your answer with suitable diagram.

Q-6 How on land gravity survey is conducted? Discuss briefly the following gravity 14 corrections: Bouger correction, latitude correction, elevation correction and Terrain correction to reduce the Gravity data?

Q-7 Write is the applications of gravity and magnetic methods in Oil and mineral 14 exploration?

Q-8 (1) What type of Gravity meter we use in the normal Gravity survey: Relative or 01 Absolute?

(2) Where Horizontal magnetometer can only be used: at pole or equator? 01

(3) The Elevation correction and Bouguer correction in gravity survey are related linearly or opposite? 01

(4) What will be the Elevation correction in gravity survey on continents: Positive or Negative? 01

(5) In Gravity, which correction is mentioned with short form 'g_B': Terrain correction or Bouger correction? 01

(6) The nature of the drift of Gravity meter should be Linear or Non linear? 01

(7) What will be the value of Terrain correction: always positive or negative? 01

--------END OF PAPER--------

GANPAT UNIVERSITY
M.Sc. Second Semester Examination May, 2013
Subject: Geophysics
Paper: GPA 203 Electrical Methods

Time: 3 hours

Total Marks: 70

Instructions:

1) Attempt any three questions from each section, of which question No. 4 and 8 are compulsory

2) Answer each section in separate answer book.

SECTION: I

Q-1 (a) Give a brief account of the Resistivity survey methods   07
    (b) Describe different electrode configurations.   07

Q-2 (a) What factors cause non-uniqueness in Resistivity interpretation?   07
    (b) Draw Resistivity profiles over a vertical dyke using different electrode configurations.   07

Q-3 (a) Give a short account of computational method in Resistivity interpretation.   07
    (b) Discuss how *mise-à-la-masse* method is used for 3-D modeling.   07

Q-4
1. Which Resistivity method is used for bedrock investigation?   01
2. For indentifying a vertical fault which Resistivity method is suitable?   01
3. What type of Resistivity survey is required to separate out saline and fresh water zones?   01
4. Under what condition 50% current penetration is achieved in Resistivity survey?   01
5. What is the change in measurements when the current electrodes and the potential electrodes are interchanged in Resistivity survey?   01
6. What type of current is used in Resistivity survey?   01
7. Does the Resistivity increase with porosity?   01

SECTION: II

Q-5 (a) Give a short note on the mechanism of Self Potential field.   07
    (b) Briefly discuss Self Potential survey and its interpretation.   07

Q-6 (a) Briefly discuss Time Domain measurement of I.P, and   07
    (b) Describe Frequency Domain measurement of I. P.   07

Q-7 (a) Give a brief history of Telluric Current method.   07
    (b) Illustrate a field example of Time Domain and Frequency Domain I.P. results over a massive sulphide body.   14

Q-8
1. I. P. method is suitable for what type of exploration?   01
2. Which geophysical method is best used for ground water exploration?   01
3. Which electrical method may be used for oil exploration?   01
4. For identification of a hidden water pipe line in the ground what survey may be useful?   01
5. Does I. P. anomaly indicate dip of the ore body?   01
6. Does a graphite body produce I P anomaly?   01
7. Does the Frequency Domain method require smaller current in I P survey than the Time Domain method?   01

--------END OF PAPER--------

Time: 3 hours

Instructions: Total Marks: 70

1) Attempt any three questions from each section, of which question No. 4 and 8 are compulsory
2) Answer each section in separate answer book.

SECTION: I

Q-1   Answer the following (Any-2)   **14**

(A) What is DOS? Explain any 5 commands of DOS.

(B) What is Flowchart? Explain with example.

(C) Explain the conditional statements with example.

Q-2   Answer the following (Any-1)   **14**

(A) What is arithmetic operator? Explain with the example.

(B) Explain the different generations of Computer with example.

Q-3   Describe UNIX and LINUX in detail with basic commands.   **14**

Q-4   Answer the following.   **07**

(A)   Which option of ls command used to view file inode number?

(B)   List out the data types of Fortran.

(C)   What is the use of Pointer?

(D)   What is Binary?

(E)   Which command is used to input and output in FORTRAN?

(F)   Which command used to see the content of file in DOS?

(G)   What is the use of cat command in LINUX?

SECTION: II

Q-5   Answer the following.

(A) Find the values of y at $x = 21$ and 28 from the following data.   **14**

x	20	23	26	29
$f(x)$	0.3420	0.3907	0.4384	0.4848

(B) Evaluate: $\int_0^1 \frac{1}{1+x^2}\, dx$, by Composite (1) Trapezoidal rule (2) Simpson's Rule (Both)

Q-6 **Answer the following.**   14

(A) Solve: $3x - cosx - 1 = 0$ by Newton Raphson iteration formula.

(B) Solve the following system by Gauss Jordan method

$x + 2y + z = 3$, $\quad 2x + 3y + 3z = 10 \quad 3x - y + 2z = 13$

Q-7 **Answer the following.**   14

(A) Find A^{-1}. using by Gauss Elimination for $\quad A = \begin{bmatrix} 0 & 1 & 1 \\ 1 & 2 & 0 \\ 3 & -1 & -4 \end{bmatrix}$

(B) By the method of Least Squares Find the best fitting straight line to the data given below:

Also estimate the value of y at $x = 2.5$

x	0	1	2	3	4
$f(x)$	1	1.8	3.3	4.5	6.3

Q-8 **Answer the following.**   07

(A) Is repeat until loop structure?

(B) Keyword operator is used to overload an operator?

(C) Is cout an object?

(D) main() can be declared as member function of any class?

(E) What is inverse formula for 2x2 Matrix? Using it find A^{-1} if $A = \begin{pmatrix} 2 & 1 \\ 1 & 2 \end{pmatrix}$

(F) Is it true that for any two matrices A and B, A.B = B.A. If no, give an example of it.

(G) If $f(x) = x^2 - x$,find $f(a)$ where $a = \begin{bmatrix} 1 & -1 \\ 1 & 1 \end{bmatrix}$

--------END OF PAPER--------

GANPAT UNIVERSITY

M.Sc. Second Semester Examination (NEW COURSE) (C.B.C.S) April-May, 2013

Biotechnology/Microbiology/Geophysics

BTB/MBB/GPB 205 LCS: Language and Communication Skills-II

Time: 3 hours

Total Marks: 70

Instructions:

1) Attempt any three questions from each section, of which question No. 4 and 8 are compulsory

2) Answer each section in separate answer book.

SECTION: I

Q-1 Attempt the following: 14

1. Discuss essentials of body language which we should keep in mind while giving presentation.

2. Discuss 'self skill analysis' and 'researching organization' as pre-interview preparation techniques.

Q-2 Attempt the following: 14

1. Discuss exchanging opinions as an interaction strategy in a group discussion.

2. Discuss various types of interview questions.

Q-3 Attempt the following: 14

1. Define the term debate and discuss its importance as a part of selection process.

2. Discuss process of interview in detail.

Q-4 Answer the following in one or two sentences: 07

1. List out essentials which we should find out about environment before we deliver our presentation.

2. List out different answering strategies in an interview.

3. List out essentials that one should find out about organization before appearing in interview in that organization.

4. List out essentials of selection group discussion.

5. List out techniques of individual contribution in a group discussion.

6. Prepare of different steps of interview process.

7. Define the term 'public speech'.

SECTION: II

Q-5 Attempt the following: 14

1. Welfare committee of Manohar Chemicals, Mehsana called a meeting of all the employees of the company to know about their expectations from company. Write minutes of this meeting.

2. Miracle Softwares, Bangalore wants to start its branch in Mehsana. The chairman of the company has formed a committee of three persons to examine feasibility of the project. Write a feasibility or survey report on this.

Q-6 Attempt the following: 14

1. Discuss types of technical articles in details.

2. You have completed your study and now you want to join a job. Write an unsolicited application to Lions Hospital, Mehsana for the post of a laboratory technician

Q-7 You feel that one office of Ganpat University should be established at 14 Himmatnagar to facilitate students in filling in different essential forms without travelling to the university headquarter from that place. You have capability to carry out this project. Write a technical proposal for this purpose

Q-8 Answer the following in one or two sentences: 07

1. List out different blocks of job application.

2. What should be the maximum length of the title of a report?

3. How many main points are there for the logical presentation of data in a report? List out them.

4. How many main sections one should add in a technical proposal? List out them.

5. List out elements of a technical article.

6. How educational qualification and experience should be presented in our application as per the current trend?

7. In which innovative way details about our known languages can be presented in our resume?

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