

GANPAT UNIVERSITY
M. Sc. First Semester Examination (C.B.C.S) Nov-Dec, 2013
Subject: Geophysics
Paper: GPA 101 EOG Elements of 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) Describe Principles and Laws of stratigraphy. | 07 |
| | (B) What is geology? Explain earth as a planet. | 07 |
| Q-2 | (A) Give the definition of Erosion. Discuss Biological weathering with example. | 07 |
| | (B) Give the definition of Gangue and Ore. Describe the physical properties Form and Hardness. | 07 |
| Q-3 | (A) Discuss about structure of Igneous Petrology. | 07 |
| | (B) Write a brief note on geological time scale. | 07 |
| Q-4 | 1. Earth is also known as _____ planet. | 01 |
| | 2. Discontinuity between crust and mantle is known as _____. | 01 |
| | 3. Palaeozoic era means _____. | 01 |
| | 4. Types of weathering are _____. | 01 |
| | 5. Specific gravity of quartz is _____. | 01 |
| | 6. Colour of gabbro is _____. | 01 |
| | 7. Mineral composition of dolerite is _____. | 01 |

SECTION: II

| | | |
|-----|---|----|
| Q-5 | (A) Describe Azimuth Measurements and Bearing. | 07 |
| | (B) Discuss structure of sedimentary rocks. | 07 |
| Q-6 | (A) Explain structures of metamorphic rocks. | 07 |
| | (B) Write a note on petrography of Schist and Gneiss. | 07 |
| Q-7 | (A) Write a note on types of Fault. | 07 |
| | (B) Describe types of unconformity. | 07 |
| Q-8 | 1. Sandstone is a _____ type of sedimentary rock. | 01 |
| | 2. Slate is characterized by _____. | 01 |
| | 3. Dip and strike are _____ to each other. | 01 |
| | 4. Anticline is a type of _____. | 01 |
| | 5. Net slip is _____. | 01 |
| | 6. Basalt shows _____ joint. | 01 |
| | 7. Bearing of a bed is also known as _____. | 01 |

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

GANPAT UNIVERSITY
M.Sc. First Semester Examination (C.B.C.S) Nov-Dec, 2013
Subject: Geophysics
Paper: GPA 102 SEG Solid Earth Geophysics

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 Kepler's laws of Planetary motion. | 07 |
| | (b) Explain geoid and normal gravity change from equator to pole. | 07 |
| Q-2 | (a) Briefly discuss the magnetic character of ocean floor. | 07 |
| | (b) With a diagram illustrate thermal structure of the Earth. | 07 |
| Q-3 | (a) Briefly discuss geomagnetic reversals and polar wandering. | 07 |
| | (b). With a diagram illustrate temperature distribution in a subduction zone. | 07 |
| Q-4 | 1. Fault zones are conductive or resistive? | 01 |
| | 2. What is the notation of a head wave? | 01 |
| | 3. What is an approximate percentage of Fe in the Earth's core? | 01 |
| | 4. What force is caused at the Equator by rotation of the Earth? | 01 |
| | 5. Gravity anomaly in the Himalaya is high or low? | 01 |
| | 6. What is the mean density of the Earth? | 01 |
| | 7. What is the mass of the Earth? | 01 |

SECTION: II

| | | |
|-----|---|----|
| Q-5 | (a) Illustrate Earth's internal structure with major discontinuities. | 07 |
| | (b) Illustrate crustal structure and seismic waves for local earthquakes. | 07 |
| Q-6 | (a) Explain Elastic rebound theory.. | 07 |
| | (b) Define frequency-magnitude relation with a diagram. | 07 |
| Q-7 | (a) Briefly discuss the concept of Isostasy. | 07 |
| | (b) Draw a schematic diagram of a subduction tectonic model. | 07 |
| Q-8 | 1. Define the meeting place of three plates. | 01 |
| | 2. What parameter can be estimated from Wadati plot? | 01 |
| | 3. In radioactive measurement what ray is recorded? | 01 |
| | 4. How do you define the angle between strike and slip of a fault? | 01 |
| | 5. What is the modern scale for earthquake intensity? | 01 |
| | 6. How do you define a dipping seismic zone? | 01 |
| | 7. Attenuation of seismic waves depends on what factor? | 01 |

— End of Papers —

GANPAT UNIVERSITY
M.Sc. First Semester Examination (C.B.C.S) Nov-Dec, 2013
Subject: Geophysics
Paper: GPA103 GAS Geoexploration and Surveying

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) What are the different corrections in processing of gravity data? 07
(b) Differentiate the magnetic induction 'B' & magnetic force (field) 'H' with neat and clean diagram. What is physical property used in magnetic field? 07
- Q-2 (a) Briefly write the field procedure of gravity survey. Why gravity base is needed in relative gravity survey? 07
(b) What are the components of earth magnetic field and how they are related to each other? 07
- Q-3 (a) Explain the wenner and schlumberger arrangement of electrodes in profiling and vertical electrical soundings. How many types of curves are there in VES survey? 07
(b) What are the different types of waves produced in seismic survey and write the mathematical formula for P and S wave velocities? 07
- Q-4 Answer the following questions 07
(a) Why resistivity is taken as physical property not resistance in electrical prospecting?
(b) What is depth of information in wenner array?
(c) Bouguer anomaly in gravity survey is the sum of two anomalies what are they?
(d) Zero length spring in gravimeter is of zero length. If not justify it?
(e) Differentiate between reflection and refraction phenomenon in seismic survey.
(f) What type of magnetometer is used at pole?
(g) Why P wave velocity is greater than S wave velocity?

SECTION: II

- Q-5 Which geophysical method is most commonly used in ground water and engineering projects write the survey procedure and data processing along with the types of curves obtained for groundwater and engineering survey 14
- Q-6 (a) What type anomaly will be responsible for locating oil and gas field basin in gravity and magnetic surveys and why? 07
(b) What are the applications of electromagnetic surveys and discuss its merit over D.C resistivity survey? 07
- Q-7 (a) What geophysical surveys will be adopted to locate diamond ferries kimberlitic pipe in granitic terrain? 07
(b) How many types of radiations emitted by radioactive elements and which radiation is more penetrating. What are instruments used for radiometric surveys? 07
- Q-8 Answer the following questions 07
(a) Can oil & gas directly detected by seismic survey?
(b) What type of curve is suitable for engineering project while conducting VES?
(c) Mention two highly radioactive elements?
(d) What geophysical survey is suitable for iron ores?
(e) Why H type curve is suitable for groundwater?
(f) What is depth of penetration of signal corresponding to high and low frequencies in GPR survey?
(g) Can EM survey done without making ground contact?

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

GANPAT UNIVERSITY
M.Sc. **First** Semester Examination (C.B.C.S) Nov-Dec, 2013
Subject: Geophysics
Paper: **GPA 104 FPM** Fundamentals of Physics and Mathematics

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.
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SECTION: I

- | | | |
|-----|--|------|
| Q-1 | a. Prepare a list of principles of optics and gravitation. Explain any two in brief applicable in geophysics. | [07] |
| | b. Explain origin and production of X-rays. | [07] |
| Q-2 | a. Explain in brief conductors and capacitors. | [07] |
| | b. How photoelectric effect works? Discuss any two parameters affecting photoelectric effect. | [07] |
| Q-3 | a. Write and discuss any two laws of thermodynamics. | [07] |
| | b. Explain construction of a blackbody. Discuss the spectrum of a blackbody. | [07] |
| Q-4 | Answer the following questions (One mark each) | [07] |
| | a. What do you mean by a blackbody? | |
| | b. How many degrees of freedom are there for a diatomic gas molecule? | |
| | c. Write an expression relating pressure of gas and R.M.S. velocity of molecules. | |
| | d. Write an equation of motion of any object having mass m . | |
| | e. What do you mean by nuclear Fission? | |
| | f. Write an expression of any one uncertainty principle. | |
| | g. According to the principle of equipartition of energy the energy associated with each degree of freedom is _____. | |
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SECTION: II

Q-5(a) Check the convergence of the series and state the result used here. [07]

(i) $\sum \frac{2n^2+3n}{5+n^3}$ (ii) $\sum \frac{2^n n!}{n^n}$.

(b) State and prove fundamental theorem of Calculus. [07]

Q-6(a) Solve following differential equation and state the method used here. [07]

(i) $y' + \cos x y = e^{-\sin x}$ (ii) $\cos x y' + y = \cot x$.

(b) Solve by using Gauss Jordan method. [07]

(i) $x - 2y - z = -1$;
 $2x - z - 3w = 1$;
 $3x + y - z - 5w = 1$;
 $2x + 3z + w = 0$.

(ii) $x + y + 5z = 5$;
 $x + 4y - z = 14$;
 $x + 2y - 11z = 4$.

Q-7(a) Define conditional probability. If A_1 and A_2 are any two events of [07]

sample space and B is an event of U such that $P(B) \neq 0$, then prove that

(i) $P((A_1 \cup A_2) | B) = P(A_1 | B) + P(A_2 | B) - P((A_1 \cap A_2) | B)$

(ii) $P(A' | B) = 1 - P(A | B)$.

(b) Let A and B are two independent events such that $P(A \cup B) = 0.5$ [07]
and $P(A) = 0.2$ Then find $P(B)$. State the result used here.

Q-8. Define the following terms. [07]

- a) Open set
- b) Closed set
- c) Limit points
- d) Complete space
- e) Uniform convergence
- f) Rank of matrices
- g) Gradient, Divergence, Curl.

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

GANPAT UNIVERSITY
M.SC. SEMESTER-I EXAMINATION (NEW COURSE) (CBCS)
NOV-DEC 2013
BTB/MBA/GPB 105 LCS LANGUAGE AND COMMUNICATION SKILLS-I

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) What is communication? Discuss with definitions 07
(B) Discuss the conventional medias of communication. 07
- Q-2(A) Discuss the 7 Cs of communication. 07
(B) Discuss the socio-psychological barriers to communication. 07
- Q-3(A) What is listening? Discuss the modes of listening. 07
(B) Discuss various types of listening. 07
- Q-4 Do as directed. 07
- a. Either the principal or the teachers.....at fault.
(Choose proper verb..... is, are, have)
 - b. HowI help you?
(use proper modal auxiliary)
 - c. People say that money attracts money. (change the voice)
 - d. Change the voice (change the voice)
 - e. I purchased a brand new android mobile phone.(find out adjectives)
 - f. I will attend the lectures. (use present perfect)
 - g. I am a very regular student.
(turn the sentence into negative without changing the meaning)

SECTION: II

- Q-5(A) What is reading? Discuss techniques of effective reading comprehension. 07
(B) Discuss the paralinguistic features of effective speaking. 07
- Q-6(A) Discuss the components of effective speaking in detail. 07
(B) Discuss the importance of word selection in effective writing. 07
- Q-7(A) Suppose you are a lab technician in one college and you have placed an order of various lab- instruments as the new semester is starting very shortly but the goods has not been delivered yet. Write a letter of complaint. 07
(B) As a customer care representative you have received a letter of complaint from a college as you have failed to timely deliver the ordered lab-instruments. Write a letter of adjustment. 07
- Q-8 Answer the following questions in one or two lines. 07
- a. Why is a complaint letter written?
 - b. Explain tone and Stress.
 - c. Explain modified Block form of lay out.
 - d. Write characteristics of effective writing.
 - e. Explain BFG form of layout
 - f. Write purposes of reading.
 - g. Why quotations are invited before placing an order?

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