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Test Booklet Series

A

T. B. C. : GGM – 3/2019

TEST BOOKLET

GEOPHYSICS

PAPER – II

Sl. No. 3000

Time Allowed : 3 Hours

Maximum Marks : 300

: INSTRUCTIONS TO CANDIDATES :

1. IMMEDIATELY AFTER COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET **DOES NOT** HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET OF THE SAME SERIES ISSUED TO YOU.
2. ENCODE CLEARLY THE TEST BOOKLET SERIES **A, B, C** OR **D**, AS THE CASE MAY BE, IN THE APPROPRIATE PLACE IN THE ANSWER SHEET USING BALL POINT PEN (BLUE OR BLACK).
3. You have to enter your **Roll No.** on the Test Booklet in the Box provided alongside. **DO NOT** write *anything else* on the Test Booklet.
4. **YOU ARE REQUIRED TO FILL UP & DARKEN ROLL NO., TEST BOOKLET / QUESTION BOOKLET SERIES IN THE ANSWER SHEET AS WELL AS FILL UP TEST BOOKLET / QUESTION BOOKLET SERIES AND SERIAL NO. AND ANSWER SHEET SERIAL NO. IN THE ATTENDANCE SHEET CAREFULLY. WRONGLY FILLED UP ANSWER SHEETS ARE LIABLE FOR REJECTION AT THE RISK OF THE CANDIDATE.**
5. This Test Booklet contains **150** items (questions). Each item (question) comprises four responses (answers). You have to select the correct response (answer) which you want to mark (darken) on the Answer Sheet. In case, you feel that there is more than one correct response (answer), you should mark (darken) the response (answer) which you consider the best. In any case, choose **ONLY ONE** response (answer) for each item (question).
6. You have to mark (darken) all your responses (answers) **ONLY** on the **separate Answer Sheet** provided by **using BALL POINT PEN (BLUE OR BLACK)**. See instructions in the Answer Sheet.
7. All items (questions) carry equal marks. All items (questions) are compulsory. Your total marks will depend only on the number of correct responses (answers) marked by you in the Answer Sheet. **There will be no negative markings for wrong answers.**
8. Before you proceed to mark (darken) in the Answer Sheet the responses to various items (questions) in the Test Booklet, you have to fill in some particulars in the Answer Sheet as per the instructions sent to you with your **Admission Certificate.**
9. After you have completed filling in all your responses (answers) on the Answer Sheet and after conclusion of the examination, you should hand over to the Invigilator the *Answer Sheet* issued to you. You are allowed to take with you the candidate's copy / second page of the Answer Sheet along with the Test Booklet, after completion of the examination, for your reference.
10. Sheets for rough work are appended in the Test Booklet at the end.

SEAL

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1. The S-wave shadow zone is evidence that :

(A) The outer core is liquid

(B) The outer core is composed of iron and nickel oxides

(C) The inner core is solid

(D) It is very hot near the core

2. The first motions of earthquake are useful for :

(A) Determining the location of an earthquake

(B) Determining the style of faulting that caused an earthquake

(C) Determining the magnitude of an earthquake

(D) Determining the depth of an earthquake

3. Which of the following describes the build up and release of stress during an earthquake ?

(A) The intensity scale

(B) The elastic rebound theory

(C) The principle of superposition

(D) None of these

4. Who developed the procedure used to measure the size of an earthquake ?

(A) Charles Richter

(B) Edward Sheridan

(C) James Hutton

(D) Art Smith

5. Which of the following measures an earthquake's intensity based on the observed effects on people and structures ?

(A) Richter scale

(B) Modified Mercalli scale

(C) The Centigrade scale

(D) The moment magnitude scale

6. Which of the following statement is correct ?

(A) Apparent dip is always less than the true dip

(B) Apparent dip is always greater than the true dip

(C) Apparent dip is always equal to the true dip

(D) True dip is always less than the apparent dip

7. In a syncline :

(A) Younger rocks are in the center (core) of the fold

(B) Older rocks are in the center (core) of the fold

(C) Older rocks in the flank of the fold

(D) None of these

8. One limb may dip upto 90 degrees whereas the other will be nearly horizontal, is known as :

(A) Overturned fold

(B) Recumbent fold

(C) Monoclinal fold

(D) None of these

9. In which of the following type of fold the attitude of the fold axis or the hinge line is defined by two measurements : the bearing (strike) and its projection (inclined or horizontal) ?

(A) Plunging fold

(B) Recumbent fold

(C) Monoclinal fold

(D) Overturned fold

10. Stereographic projections is used for solving :

(A) Apparent dip

(B) The trend and plunge of the intersection of two planes

(C) Angles between planes

(D) All of these

11. The horizontal component of the dip separation and it gives the amount of land shifted sideways :

(A) Heave

(B) Head

(C) Throw

(D) Dip

12. If we treat a fault as rectangular, the dimension along strike is called the fault :

(A) Width

(B) Length

(C) Dip

(D) Head

13. Horizontal slip between the adjacent blocks along the strike of the fault line :

(A) Dip-slip faults

(B) Strike-slip faults

(C) Normal-slip faults

(D) None of these

14. Dip angel of reverse slip and thrust slip faults are degree :

(A) dip < 450 and dip < 450

(B) dip > 450 and dip > 450

(C) dip > 450 and dip < 450

(D) dip < 450 and dip > 450

15. What is the surface expression occurs in an extensional (tension) environment ?

(A) Folding/reverse fault

(B) Bending horizontally/strike slip fault

(C) Thinning crust/normal fault

(D) None of these

16. The AFMAG technique utilises the frequency range over :

(A) 30-50 KHz

(B) 1-30 KHz

(C) 1-10 KHz

(D) 1 Hz-1 KHz

17. The conductivity of rocks depends on :

(A) Porosity

(B) Water saturation

(C) The type of dissolved minerals and salts

(D) All of these

18. The ideal configuration for measuring resistivity variation with depth is :

(A) Schlumberger

(B) Wenner

(C) Double-dipole

(D) None of these

19. If AB is the current electrode separation, the depth of investigation for VES is :

(A) One-third of AB

(B) One-sixth of AB

(C) One-half of AB

(D) None of these

20. Induced Polarisation (IP) method is used for :

(A) Land mine detection

(B) Massive sulphide exploration

(C) Disseminated ore body exploration

(D) Lens type ore body exploration

21. To know the lateral variation of resistivity, which electrode array is ideal ?

(A) Wenner

(B) Schlumberger

(C) Double-dipole

(D) None of these

22. Membrane polarisation in IP is a feature of :

(A) Electrode conduction

(B) Dielectric conduction

(C) Electrolytic conduction

(D) None of these

23. Very Low Frequency (VLF) wave can penetrate water to a depth of roughly :

(A) 50 to 100 m

(B) 50 to 60 m

(C) 10 to 40 m

(D) 10 to 20 m

24. Time domain electromagnetic system includes :

(A) AFMAG

(B) SIROTEM

(C) VLF

(D) All of these

25. There are many named survey arrays that can be made using four or fewer electrodes. Which two rather different arrays have the same geometric factor ?

(A) Wenner and Schlumberger

(B) Schlumberger and Dipole-dipole

(C) Dipole-dipole and pole-pole

(D) Pole-pole and Wenner

26. Which type of DC resistivity survey is most appropriate for finding the thickness of an aquifer at one location ?

(A) Soundings

(B) Profiling

(C) Three dimensional arrays

(D) Azimuthal arrays

27. Which type of DC resistivity survey is most suitable for finding out how the thickness of overburden varies under a stretch of roadway ?

(A) Soundings

(B) Profiling

(C) Three dimensional arrays

(D) Azimuthal arrays

28. Which type of DC resistivity survey is most suitable for identifying the trend of subsurface fractures under thin overburden ?

(A) Soundings

(B) Profiling

(C) Three dimensional arrays

(D) Borehole

29. The acceleration due to gravity (g) is maximum at :

(A) Poles

(B) Equator

(C) Mid latitudes

(D) Sub tropical region

30. Size of an earthquake can be obtained from :

(A) Richter magnitude scale

(B) Mw

(C) Moment

(D) Intensity

31. Geomagnetic secular variations originate from :

(A) Inner core

(B) Outer core

(C) Crust

(D) Mantle

32. Earth's shape is :

(A) Oblate ellipsoid

(B) Prolate ellipsoid

(C) Ellipsoid

(D) None of these

33. Seismic P-wave velocity becomes maximum near :

(A) Mohorovicic discontinuity

(B) Conrad discontinuity

(C) Gutenburg discontinuity

(D) Lehman discontinuity

34. Chandler wobble effect is the consequence of :

(A) Great earthquake

(B) Elastic yielding of earth

(C) Atmospheric imbalance

(D) Moon's effect

35. The oldest rock in the earth is found to be in :

(A) Deep ocean

(B) Highest mountain peaks

(C) Meteorite crater

(D) Archean shield areas

36. Plume activity is associated with :

(A) Moho

(B) Gutenburg discontinuity

(C) 670 Km discontinuity

(D) D II layer

37. The temperature of the centre of the earth is estimated to be in degree centigrade :

(A) Less than 2000

(B) Greater than 4000

(C) 4000

(D) 2000

38. The earth's magnetic field is maximum at :

(A) Poles

(B) Equator

(C) Mid latitudes

(D) Sub tropical region

39. Which of the following effect do not result geometrical errors/distortion in satellite images ?

(A) Earth curvature

(B) Earth rotation

(C) Atmospheric absorption

(D) Sensor platform motion

40. Which wavelength can be most useful for imaging from a satellite in cloud-covered conditions ?

(A) 0.4 micro meter

(B) 0.4 nano meter

(C) 1.4 micro meter

(D) 4 centimeter

41. Why does vegetation look green ?

(A) Because vegetation absorbs light in the green range of the spectrum

(B) Because vegetation reflects light for wavelengths in the green range of the spectrum

(C) Because chlorophylls has a flat reflectance curve regardless of wavelength

(D) Because the eye is sensitive to light corresponding to wave-length in the green range of the spectrum

42. Visible light has wavelengths from 0.4 micro meter (purple) to 0.7 micro meter (red). Which colour has the highest frequency ?

(A) Blue

(B) Green

(C) Purple

(D) Red

43. What is the name of the technique that makes it possible to make surface elevation models ?

(A) Interferometric SAR

(B) ISAR

(C) Elevated SAR

(D) SAR

44. In a remote sensed data of the earth, the presence of hydrous species can be inferred using :

(A) Radio wave

(B) Gamma

(C) Infrared

(D) Visible light

45. Which of the following types of remote sensing would be most useful in obtaining an accurate terrain representation on Venus ?

(A) Microwave

(B) Radar

(C) Sonar

(D) Landsat

46. Living vegetation on false colour IR images appear as :

(A) Red

(B) Blue

(C) Green

(D) Black

47. The number of spectral bands of Landsat TM satellite data is :

(A) 6

(B) 8

(C) 9

(D) 7

48. The smallest difference in radiance detected by satellite sensor is called :

(A) Spectral resolution

(B) Temporal resolution

(C) Radiometric resolution

(D) Spatial resolution

49. When nine geophones form a group, this enhances the signal to noise ratio by a factor ?

(A) 21

(B) 3

(C) 18

(D) 27

50. Wavelet transform is used for :

(A) Low frequency

(B) High frequency

(C) Intermediate frequency

(D) Low to high frequency simultaneously

51. Fourier series when terminated will lead to :

(A) Stoppage of leakage information

(B) Gibbs phenomenon

(C) Enhances signal to noise ratio

(D) None of these

52. Window function is a tool to eliminate :

(A) Gibbs phenomenon

(B) Single frequency

(C) Infinite frequency

(D) None of these

53. Concept of sequence is used in which transform ?

(A) Hankel transform

(B) Walsh transform

(C) Hilbert transform

(D) Har transform

54. Skin depth is inversely proportional to the square root of the :

(A) Resistivity

(B) Frequency

(C) Amplitude

(D) Phase

55. The region of initiation of seismic energy within the Earth is called :

(A) Epicentre

(B) Hypocentre

(C) Area of greatest building damage

(D) Area of least building damage

56. Earthquakes are produced during :

(A) Plastic failure within the mantle

(B) Brittle failure during faulting

(C) Mushrooming during faulting

(D) None of these

57. Seismic waves are waves of energy that :

(A) Plastically distort the material that they pass through

(B) Permanently distort the material that they pass through

(C) Break the material that they pass through

(D) Elastically distort the material that they pass through

58. As rupture along a fault initiates, waves of energy travel outward from the hypocentre in a :

(A) Linear fashion

(B) A straight line path

(C) A spherical fashion

(D) None of these

59. Body waves emanate spherically from the focus travelling :

(A) Entirely within the interior of the earth

(B) Along the surface of the earth

(C) Within the world's oceans

(D) Into space dude

60. P-wave produce series of :

(A) Shearing motions that are right angles to the direction of wave propagation

(B) Contraction and expansions that are in the direction of wave propagation

(C) Circular motions like ocean wave

(D) Snake-like motions parallel to the Earth's surface

61. S-waves produce a series of :

(A) Contractions and expansions that are in the direction of wave propagation

(B) Snake-like motions parallel to the Earth's surface

(C) Circular motions like an ocean wave

(D) Shearing motions that are right angles to the direction of wave propagation

62. Rayleigh waves move along the surface of the Earth forming a wave that is much like :

(A) A skier moving down a mountain hill

(B) A car travelling through the sand dunes

(C) An ocean wave

(D) A whale gliding along the ocean's surface

63. A seismograph is a device used to :

(A) Sound an alarm

(B) Prevent eqathquakes from occurring

(C) Record the vibrations produced during an earthquake

(D) Calm the seismologist during an earthquake

64. Which of the following classes represent earthquakes with magnitudes between 4 and 4.9 ?

(A) Moderate

(B) Strong

(C) Light

(D) Great

65. On global scale, on average, over 900,000 earthquakes a year occur with magnitudes below :

(A) 6.0

(B) 7.0

(C) 2.5

(D) 4.0

66. Great earthquakes, on average, occur :

(A) 500 times annually

(B) 100 times annually

(C) 20 times annually

(D) Once every 5 to 10 years

67. Mercalli indices of VI or lower measure the effects of an earthquake on :

(A) Dogs

(B) Horses

(C) People

(D) Buildings

68. Mercalli indices of VII or higher measure the effects of an earthquake on :

(A) Cows

(B) Horses

(C) People

(D) Buildings

69. What type of forces dominant at convergent plate margins ?

(A) Tensional forces

(B) Shearing forces

(C) Compressive forces

(D) None of these

70. The two sides of a fold are called :

(A) Anticlines

(B) Synclines

(C) Limbs

(D) Axial planes

71. At divergent plate boundaries, one would expect to find :

(A) Folds

(B) Faults

(C) Folds and faults

(D) Neither folds nor faults

72. A broad circular or oval upward bulge of rock layers is called :

(A) Anticline

(B) Syncline

(C) Basin

(D) Dome

73. The Red Sea is an example of :

(A) Anticline

(B) Strike-slip fault basin

(C) Rift valley

(D) Horst block mountain

74. The primary result of earthquakes is :

(A) Building and bridge collapsed

(B) Rapture of water and gas piplelines

(C) Change in course of river and creation of new islands

(D) All of these

75. What is the major consequence of Tropical Cyclones ?

(A) Fierce wind

(B) Heavy rain

(C) Storm surge

(D) All of these

76. The major man made causes of floods are :

(A) Deforestation

(B) Siltation

(C) Bursting of dam

(D) All of these

77. Mass killing diseases can be referred as :

(A) Biological disaster

(B) Industrial disaster

(C) War disaster

(D) Flood

78. A point on the surface of the earth vertically above the focus is known as :

(A) Epicenter

(B) Hypocenter

(C) Special focus

(D) None of these

79. Which instrument is used for recording the occurrences of the earthquake ?

(A) Richter Scale

(B) Seismology

(C) Seismograph

(D) None of these

80. Which area in the world witnesses highest seismic earthquake activity ?

(A) Mid-continental belt

(B) Circum Pacific belt

(C) Mid-Atlantic belt

(D) All of these

81. What type of disaster is most prominent in India ?

(A) Flood

(B) Draught

(C) Cyclone

(D) Earthquake

82. Which volcanic eruption is reponsible for raising temperature of the Northern Hemisphere by 1.2°C ?

(A) Bhuj

(B) Etna

(C) Krakatoa

(D) Mt. Pinatubo

83. Which is the major controlling system for reduction of volcanic disaster ?

(A) Prediction for early warning of eruption

(B) Timely evolution and relief work

(C) Both (A) and (B)

(D) None of these

84. Which technique is used for prediction of early warning of eruption ?

(A) Electric Distance Measures

(B) Tilt Meters

(C) GPS and Satellite Inferring Rader

(D) All of these

85. Shallow earthquakes, less than 20 km deep, are associated with :

(A) Convergent plate boundaries

(B) Divergent plate boundaries

(C) Transform plate boundaries

(D) All of these

86. Which of the following disasters can be triggered by an earhquake ?

(A) Tsunami

(B) Intense ground shaking

(C) A landslide

(D) All of these

87. Which of the following statments is false ?

(A) Earthquakes occur in plate boundaries.

(B) The time and location of most major earthquakes can be predicted several days in advance.

(C) Earthquakes can be caused by normal, reverse and strike-slip faulting.

(D) P-waves travel faster than both S-waves and Surface waves.

88. Volcanic eruptions are closely associated with :

(A) Mountain building and fracturing

(B) Deforestation

(C) Landslides

(D) Heat budget

89. Tropical cyclones originate within :

(A) Intermediate between polar and temperate zones

(B) Mainly tropical area

(C) Mainly equatorial zones

(D) Intermediate between Tropics of Capricorn and Cancer

90. The centre of the cyclone is characterized by :

(A) High Pressure

(B) Low Pressure

(C) Very High Pressure

(D) All of these

91. Example of anthropogenic hazards are :

(A) Chemical explosion

(B) Earthquake

(C) Flood

(D) Wild fire

92. The cyclone that hit Odisha on October 29, 1999 is an example of :

(A) Super cyclone

(B) Silent cyclone

(C) Cyclone storm

(D) None of these

93. The human factors which cause floods are :

(A) Deforestation

(B) Heavy rainfall

(C) Cloud burst

(D) Large catchment area

94. The Bhopal Gas Tragedy is an example of :

(A) Industrial disasters

(B) Natural disasters

(C) Nuclear disasters

(D) None of these

95. Cyclones in the Caribbean Islands are known as :

(A) Typhoon

(B) Hurricanes

(C) Tornadoes

(D) Storm

96. Disaster at Chernobyl (USSR), Three Mile Island (USA) and Fukusima (JAPAN) are all related to :

(A) Disaster caused by earthquakes

(B) Disaster caused by Tsunami

(C) Nuclear disaster

(D) Epidemic disaster

97. Mount Kilimanjaro is the best example of :

(A) Active volcano

(B) Dormant volcano

(C) Extinct volcano

(D) None of these

98. The river which causes tremendous floods in Assam is :

(A) Ganga

(B) Brahmaputra

(C) Godavari

(D) Barak

99. Which of the following leads to earthquakes ?

(A) Movement of plates

(B) Nuclear explosion

(C) Extraction of minerals

(D) All of these

100. In the eye of the cyclone, the temperature is :

(A) Highest

(B) Lowest

(C) Normal

(D) Average

101. Disaster Management includes :

(A) Mitigation

(B) Reconstruction

(C) Rehabilitation

(D) All of these

102. Andhra Pradesh was severely battered by a cyclonic storm which killed more than 10,000 lives on :

(A) 15. 11. 1977

(B) 15. 11. 1971

(C) 15. 11. 1963

(D) 15. 11. 1945

103. How many of 35 Indian States and Union Territories are disaster prone ?

(A) 23

(B) 25

(C) 12

(D) 27

104. National Institute of Disaster Management is at :

(A) Manipur

(B) Punjab

(C) Hyderabad

(D) New Delhi

105. The term 'disaster' is derived from which of the following language ?

(A) Greek

(B) Latin

(C) French

(D) Arabic

106. Earthquakes and Tsunamis constitute disaster percentage :

(A) 8%

(B) 4%

(C) 6%

(D) 17%

107. The Disaster Management Act was made in :

(A) 2006

(B) 2003

(C) 2005

(D) 2009

108. Indian National Tsunami Warning System became operational in :

(A) 2003

(B) 2007

(C) 2009

(D) 2012

109. A series of earthquakes shook the Central American Nation of Nicaragua and killed many people in the year :

(A) 1974

(B) 1972

(C) 1973

(D) 1975

110. In which year a cyclone struck the Coastal Andhra in Krishna-Godavari delta and caused havoc ?

(A) 1976

(B) 1979

(C) 1978

(D) 1977

111. Area of Indian coastline which is vulnerable to storm surges, cyclones and Tsunami is :

(A) 5700 km

(B) 3700 km

(C) 2700 km

(D) 4700 km

112. The date when the super cyclone hit the Orissa coast which killed nearly 10,000 pepole and affected over 15 million people across 12 districts of Orissa is :

(A) 29. 08. 1999

(B) 29. 08. 1997

(C) 29. 08. 1998

(D) 29. 08. 1996

113. According to the World Bank, during the period 1996 to 2000, the approximate percentage loss of gross domestic produce due to disasters was :

(A) 2.85%

(B) 2.25%

(C) 2.50%

(D) 1.95%

114. The National Policy on Disaster Management was approved by the Union Cabinet in :

(A) 2008

(B) 2009

(C) 2007

(D) 2010

115. The Chairman of the National Disaster Management Authority is :

(A) Home Minister

(B) Vice President

(C) Minister, Human Resource Development

(D) Prime Minister

116. What percent of earthquakes and tsuanamis account for world disasters ?

(A) 8%

(B) 3%

(C) 9%

(D) 7%

117. Which natural hazard has caused the greatest number of deaths in a single event ?

(A) Earthquakes

(B) Floods

(C) Volcanic eruptions and related disasters

(D) Hurricanes

118. Earthquakes that occur along faults are created when :

(A) Melted rock is erupted along the fault zone

(B) Stress builds up until rocks break

(C) The earth shifts and moves along fracture

(D) (B) and (C)

119. Tsunami is :

(A) Earthquake on land mass

(B) Volcanic eruption

(C) Earthquake in ocean crust

(D) None of these

120. Magnitude of earthquake indicates amount of :

(A) Vibrations per second

(B) Vibrations per minute

(C) Oscillations

(D) Energy released

121. From where earthquake waves are generated ?

(A) Focus

(B) Epicenter

(C) Solid inner core

(D) None of these

122. Earthquakes occur most frequently at :

(A) Plate surface

(B) Plate boundaries

(C) Plate vacuum

(D) Ocean beds

123. Which of the following waves is the slowest ?

(A) P-waves

(B) S-waves

(C) Surface waves

(D) Tsunami

124. In India, highest percentage of damages causes by flood hazards :

(A) Uttar Pradesh

(B) Bihar

(C) West Bengal

(D) Tripura

125. Tsunami in the Indian Ocean occurred in the year :

(A) 2003

(B) 2004

(C) 2005

(D) 2006

126. The flood caused in Uttarakhand due to :

(A) Cloud burst

(B) Land slide

(C) Earthquake

(D) None of these

127. The magnitude of energy released by an earthquake is usually measured on Richter scale which ranges between :

(A) 0 to 7

(B) 0 to 8

(C) 0 to 9

(D) 0 to 12

128. Which zone is considered the highest vulnerability zone of the seismic zonation map of India ?

(A) Zone – IV

(B) Zone – V

(C) Zone – III

(D) Zone – II

129. The sudden release of hot materials (lava, ash, gas etc.) from volcanoes is called :

(A) Volcanic eruption

(B) Ash showers

(C) Pyroclastic flows

(D) Hot mud flows

130. Which volcanic belt is commonly called "Ring of Fire" ?

(A) The Mid-Continental Belt

(B) The Circum-Pacific Belt

(C) The Mid-Atlantic Belt

(D) The Circum-Continental Belt

131. The Indian Tsunami Early Warning Centre (ITEWC) established at Indian National Centre for Ocean Information Sciences is located in :

(A) Chennai

(B) Goa

(C) Kochi

(D) Hyderabad

132. Ground roll in seismic exploration is a type of :

(A) Converted P-wave

(B) P-wave

(C) Rayleigh wave

(D) Love wave

133. The correctional process which corrects non-vertical reflection in seismic :

(A) Migration

(B) Cross-correlation

(C) Convolution

(D) Filtering

134. Ghost is a special type of multiple where the phase shift takes place with respect to primary as :

(A) 90 degrees

(B) 180 degrees

(C) 270 degrees

(D) 360 degrees

135. Bright spots are direct indicators of :

(A) Oil

(B) Gas

(C) Water

(D) None of these

136. Geophone is normally used in oil/gas exploration as sensor. It works on the principle of :

(A) Faraday's EM induction

(B) Lenz's Law

(C) Ohm's Law

(D) None of these

137. Geophone is a type of seismometer where electro motive force directly proportional to :

(A) Displacement

(B) Acceleration

(C) Velocity

(D) None of these

138. The purpose of using tuned air gun array to :

(A) Minimise bubble effect

(B) Minimise ghost

(C) Minimise water bottom multiples

(D) Minimise bubble effect and enhancement of primary pulse

139. The dynamic range of non-distributed digital seismic recorder is :

(A) 80 db

(B) 84 db

(C) 96 db

(D) None of these

140. Aliasing is a problem in signal processing. In order to avoid the aliasing problem in seismic data processing one has to use :

(A) Low-pass filter

(B) High-pass filter

(C) Band-pass filter

(D) Band-reject filter

141. Fan shooting is usually applied to detect concealed geological structures in oil/gas exploration for :

(A) Salt dome

(B) Fault

(C) Syncline

(D) Unconformity

142. Hydrophone is a transducer of type based on :

(A) Pressure

(B) Electro-mechanical

(C) Magnetostriction

(D) None of these

143. In 3D seismic survey, if the inline and crossline folds are 3 and 4 respectivley, then the total CMP fold of 3D survey is :

(A) 4

(B) 6

(C) 12

(D) 7

144. The daily variations is geomagnetic field is :

(A) 10 nanotesla

(B) 20 nanotesla

(C) 30 nanotesla

(D) 40 nanotesla

145. In transversely isotropic medium in seismic, the number of elastic constants are :

(A) 10

(B) 12

(C) 4

(D) 5

146. Inseam wave or channel wave is applied for the exploration of :

(A) Oil/gas

(B) Water

(C) Coal

(D) Base metals

147. Ground roll in seismic can be attenuated by :

(A) Grouping of geophones

(B) Bunching of geophones

(C) Mixing of geophones

(D) None of these

148. Auto-correlation in predictive deconvolution provides the parameters :

(A) Prediction distance

(B) Operator distance

(C) Operator length and predictive distance

(D) None of these

149. The geophones are usually damped. They are either :

(A) Over-damped

(B) Under-damped

(C) Critically damped

(D) Under-damped as well as critically damped

150. The shadow zone for direct P-wave lies between the epicentral distances :

(A) 104 to 140 degrees

(B) 13 to 14 degrees

(C) 93 to 103 degrees

(D) 143 to 180 degrees

SPACE FOR ROUGH WORK

SEAL