26.2.21

Exercise

Choose the correct answer :-

1.1. Age of our earth is -

a) 4.6 billion years b) 3.6 billion years
c) 5.6 billion years d) 6.6 billion years

Ans:- 4.6 billion years

2) The circumference of our earth is -

a) 18,000 km b) 12,000 km
c) 40,075 km d) 40,175 km

Ans:- 40,075 km

3) The radius of the earth is -

a) 3670 km b) 4214 km c) 6370 km
d) 6214 km

Ans:- 6370 km

4) The most abundant chemical element in the earth's crust is -

a) Silicon b) Oxygen c) Iron
d) Aluminium

Ans:- Oxygen

5) The rock which is made up of molten magma is →

a) Igneous b) Sedimintary c) Metamorph-ic

d) Feldspur

Ans:- Metamorphic

6) The inner most layer of the earth is —

a) Crust b) Core c) Mantle

d) Asthenosphere

Ans:- Core

7) The thinnest layer of the earth is —

a) Crust b) Mantle c) Ozone d) Core

Ans:- Crust

8) Thickness of mantle is —

a) 6400 km b) 7400 km c) 4000 km

d) 2900 km

Ans:- 2900 km

9) Average density of the Earth —

a) 9.81 g/cm^3 b) 7.81 g/cm^3

c) 5.51 g/cm^3 d) 3.35 g/cm^3

Ans:- 5.51 g/cm^3

10) The oceanic crust is made up of —

a) dolerite b) granite c) basalt

d) mudstone

Ans:- Basalt

11) Temperature increases towards the inner core at the rate of 1°C for every —

a) 56 meters b) 42 metres c) 16 metres
d) 32 meters

Ans:- 32 metres

12) SIAL and SIMA are seperated by —
a) Repetti discontinuity b) Gutenberg discontinuity c) Mohorovicic discontinuity
d) Conrad discontinuity

Ans:- Conrad discontinuity

13) The discontinuity lies between mantle and outher core —
a) Gutenberg discontinuity
b) Lehman discontinuity
c) Repetti discontinuity
d) Conrad discontinuity

Ans:- Gutenberg discontinuity

14) Inner core and the outer core is divided by the discontinuity called —
a) Conrad discontinuity
b) Lehman discontinuity
c) Gutenberg discontinuity
d) Repetti discontinuity

Ans:- Lehman discontinuity

15) The CROFESIMA and NIFESIMA are seperated by —
a) Mohorovicic discontinuity

b) Repetti discontinuity
c) Gutenberg discontinuity
d) Conrad discontinuity

Ans:- Mohorovicic discontinuity

16) Average density of the matter near the earth's centre is about —
a) 4 gram / cubic cm b) 7 gram / cubic cm
c) 9 gram / cubic cm d) 11 gram / cubic cm

Ans:- 11 gram / cubic cm

17) The hottest part in the interior of the Earth is —
a) Crust b) Mantle c) Outer core
d) Inner core

Ans:- Inner core

18) The densest layer of the earth is
a) Crust b) Asthenosphere c) Mantle
d) Core

Ans:- Core

19) Asthenosphere is a Greek word meaning
a) stronger layer b) Weaker layer
c) Gaseous layer d) Rigid layer

Ans:- Weaker layer

20) The average depth of the earth crust is —

a) 30 km b) 100 km c) 200 km
d) 250 km

Ans:- 30 km

Q2) Answer in one or two words :-

Q1) What is the hottest layer in the Earth ?

Ans:- Core

Q2) What is the Earth's internal heat source ?

Ans:- Mantle

Q3) What layer is made of mostly iron and nickel ?

Ans:- Core

Q4) What layer is a solid because of the pressure of overlying rocks ?

Ans:- Core

Q5) What layer has convection currents ?

Ans:- Mantle

Q6) What layer has properties of both a solid and a liquid ?

Ans:- Core

Q7) What layer has $\frac{2}{3}$ of Earth's mass ?

Ans:- Mantle

Q8) What causes the plates to move ?

Ans:- Convectional current

Q9) What is the coldest layer ?

Ans:- Crust

Q10) What layer is immediately under the crust ?

Ans:- Mantle

Q3) True / False :-

1) The crust is the thickest layer of the Earth - False

2) The crust is the outermost layer of the Earth - True

3) The surface of seperation between the crust and the mantle is Conrad discontinuity — False

4) The earth's crust is made up of a great variety of rocks — True

5) 'P' wave of earthquake can pass through both solid or liquid — True

6) The average depth of the earth's crust is 8 km below the oceans and 60 km beneath the continents — True

7) Meaning of the Greek word 'Asthenosphere' is 'weaker layer' — True

8) Asthenosphere lies closer to the base of the Oceanic crust — True

9) Gruteinberg discontinuity seperates inner and the outer core — False

Q40) All the substances in the inner core of the earth remain in solid state - True

Q41) There is a hot spring at Bakreshwar West Bengal - True

Q42) The mantle layer extends up to a depth of 2900 km - True

Q43) Asthenosphere (100 - 200 km) is known as the 'Low Velocity Zone' of seismic waves - True

Q44) The temperature of the inner core is thought to be maximum about 5000°C to 6000°C - True

Q45) In the mantle the temperature ranges between 2000°C to 3000°C - True

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Q4) Fill in the blanks :-

1) Seismic waves are generated by an earthquake.

2) The interior - most layer or centre of the earth is Core.

3) Conrad discontinuity is lying in between SIAL and SIMA.

4) Silicon ranks second in terms of the chief constituent of the crust.

5) Oxygen ranks first in terms of the chief constituent of the crust.

6) The mantle layer constitutes about 84% of the Earth's volume.

7) The inner core in solid because of high pressure all around.

8) The circumference of the Earth is

40,075 km.

9) P (Primary) waves can pass through both solids and liquids.

10) Robinson Deep is the world's deepest mine so far known to us which is located in the South Africa.

11) Temperature is the earth's interior increases at a rate of about 1°C for every 32 or 33 meters.

12) The radius of the earth is about 6,370 km.

13) The USA produces highest amount of electricity in the world from geothermal energy.

14) S (Secondary) wave of the earthquake can not travel through liquid or semi-liquid materials.

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15) Crofesima and Nifesima is separated by Repetti discontinuity.

16) Soil lies at the top of the earth's crust.

17) SIMA is made of basalt like igneous rock.

18) Mantle lies below the crust.

19) The Continental crust is lighter than the Oceanic crust.

20) The thinnest layer of the earth is crust.

Q6) Match the following :-

a) Mantle → The intermediate layer.

b) Sima → Layer consisting of silica and magnesium.

c) Magma → Hot sticky molten matter.

d) Barysphere → The core of the Earth with heavy materials

e) Core → Inner most layer of the Earth

f) Sial → Layer consisting of silica and aluminium.

Q6) Answer the following questions very briefly :-

Q.1) Name the three main spheres of the Earth.

Ans:- Lithosphere, Atmosphere and Hydrosphere.

Q2) What do you mean by Lithosphere?
Ans:- Sphere of Rocks.

Q3) What do you mean by Hydrosphere?
Ans:- Sphere of Water.

Q.4) What name is given to zone of living things?
Ans:- Biosphere

Q5/ Upto which depth man's knowledge of structure of Earth limited?

Ans:- Upto a depth of 10 km.

Q6/ Name the three layers of the Earth

Ans:- Crust, Mantle, Core

Q7/ Name the uppermost layer of the Earth?

Ans:- Crust

Q8/ What is the density and thickness of crust?

Ans:- 2.7 and 50 km

Q9/ What does the word SIAL stand for?

Ans:- The crust consisting of silica and aluminium.

Q10/ What does the word SIMA stands for?

Ans:- Sima is the layer below sial. (Silica + Aluminium = SIMA)

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q11/ What does the word NIFE stand for ?

Ans:- The central core of the Earth (Nickle + Ferrous = NIFE)

q12/ What is the density of NIFE?

Ans:- 17 and 2500 km

q13/ Why does Sial float on Sima ?

Ans:- Sial is lighter than Sima.

q14/ Which theory is based on arrangment of Sial and Sima ?

Ans:- Wegner's Continental Drift Theory

q15/ Name the two main elements found in lithosphere ?

Ans:- Silicon and aluminium

q16/ What is a rock ?

Ans:- Solid material of lithosphere

q17/ What does term Rock stand for a layman ?

Ans:- A hard material

Q 48) On what factor does the hardness and colour of rocks depend ?

Ans:- On composition of minerals

Q 49) Name one feature affected by rocks.

Ans:- Land forms

Q 7) Differences between :-

a)	Inner Core	Outer Core
	i) The layers that lies surrounding the centre of the earth is known as inner core.	i) The layer which encircles the inner core is called outer core.
	ii) It is nearly 5100 km to 6370 km deep.	ii) It is 2900 km to 5100 km deep.
	iii) This layer has maximum amount of pressure, temperature and density	iii) Pressure, temperature and density comparatively lower than that of the inner core

	iv) Due to very high pressure all the substances remain here in solid state.	iv) All the substances in this layer remain in a solid (liquid and solid mixed state) state.
b)	Crofesima	Nifesima
	i) Upper part of the mantle is consist of chromium (Cr), ferrous (Fe), silicon (Si) and magnesium (Mg) substances. So this layer is called Crofesima.	i) Inner part of the mantle is consists of iron (Ni), ferrous (Fe), silicon (Si) and magnesium (Mg) substances. So this layer is known Nifesima.
	ii) It is nearly 30 - 700 km deep.	ii) It is 700 - 2900 km deep

Q8) Define the following terms :-

a) Nife : The core of the earth is composed primarily of Nickel (chemical symbol, Ni) Iron (chemical symbol, Fe). Thus the core material is often called NIFE.

b) Mesosphere : The mantle of the earth is composed primarily of solid and heavy minerals, iron and, magnesium. The term 'Mesosphere' is applied to the mantle as represents the mantle layer of the three concentric layers of the interior of the earth.

c) Centrosphere : The Nife (i.e. nickel - iron sphere) forms the core of the earth. It forms nucleus or inner central portion of the earth. It is termed as centrosphere.

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Q9) What is Asthenosphere ?

Ans:- The Asthenosphere is the name given to the uppermost layer of the mantle. It is a sphere. It is the zone of hot rock. It is believed to be in plastic condition. It is sometimes called the soft layer of mantle.

Q10) What do you mean by LVZ ?

Ans:- The full form, of LVZ is 'low Velocity Zone'. Asthenosphere is sometimes layer of mantle. As the earthquake shock waves travel at reduced speed it is called the 'Low Velocity Zone' (LVZ).

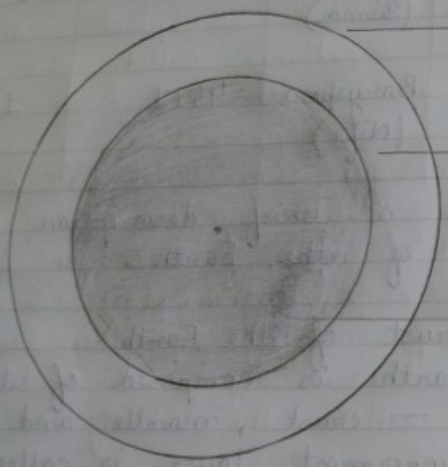
Q11) Name the three fundamental layers of the Earth.

Ans:- Three fundamental layers of the Earth are : i) Crust, ii) Mantle, iii) Core.

	Layers	Zone	Thickness (km)	Density
i)	Crust	Lithosphere (Sial)	60	2·75
ii)	Mantle	Mesosphere (Sima)	2840	5·68
iii)	Core	Barysphere (Nife)	4671	17·2

Q12) Attempt a brief description of the crust of the Earth.

Ans: The crust of the Earth:
The Earth is composed of three layers — crust, mantle and core. The uppermost layer is called crust of the Earth. It forms only 0·5% of the volume of the earth. It consists of light rocks with an average density of 2·7. It has been formed due to cooling and solidification of outer layer. This layer has a thickness of 50



Layers according to mineral

km. This is called SIAL (Silica + aluminium) also.

Q.13) Study the following diagram of the Earth's interior and answer the questions given below :-

a) What are the three main layers of the Earth ?

Ans:- X shows the crust. Y shows the mantle and Z shows the core.

b) Which layer has the highest density and why ?

Ans:- The core has the highest density as it consists of nickel and iron.

c) According to minerals, name these layers -

Ans:- X = Sial (Silica + Aluminium); Y = Sima (Silica + Magnesium) Z = Nife (Nickle + Ferrous)

Q44) What are seismic waves?

Ans:- Seismic waves: Waves originated by earthquake are known as seismic waves. The waves either under the continental crust or oceanic crust are series of movements across a certain surface that produce great disturbances and displace particles in their path.

Q45) Give a very short account about different types of earthquake?

Ans:- Earthquakes waves are of three basic types:

i) Push waves or Primary waves (P): They travel from the point of happening or focus by the displace-ment of surrounding particles. They are transmitted through solids, liquids and gases.

ii) Shake waves or Secondary waves (S): They travel through Solids

only under the crust.

iii) Surface waves or Long waves (L): They travel on earth's surface.