

B.Sc. (Sem.-1) Examination

CC 3 Paper-101

Geology

March 2019

[Max. Marks : 70]

Time : 2-30 Hours]

1. (અ) બ્રહ્માંડની ઉત્પત્તિનું વર્ણન કરો. ૧૪
અથવા
(અ) (i) વિજ્ઞાન તરીકે ભૂસ્તરશાસ્ત્રના સિદ્ધાંતો. ૦૯
(ii) બે ગ્રહો પર આધારિત સિદ્ધાંત. ૦૯
(બ) નીચેના પ્રશ્નોનાં ટૂંકા ઉત્તર આપો (છ માંથી કોઈ પણ ચાર). ૦૪
(i) જે ગ્રહ રાત્રી છે, તેનું નામ લખો.
(ii) ભૂસ્તરશાસ્ત્ર ના બે વિભાગ દર્શાવો.
(iii) ભૂસ્તરશાસ્ત્ર નું એક કાર્યક્ષેત્ર લખો.
(iv) ભરતી સિદ્ધાંત રજૂ કરનાર વિજ્ઞાનીનું નામ લખો.
(v) પૃથ્વીની ઘનતા દર્શાવો.
(vi) સૂર્ય વ્યવસ્થાના વિકાસની વ્યાખ્યા આપો.
2. (અ) કિરણોત્સર્ગતા અને પૃથ્વીની વયનું વર્ણન કરો. ૧૪
અથવા
(અ) (i) પોપડો અને ભૂમધ્યભાગ. ૦૯
(ii) તક્તી વિવર્તન. ૦૯
(બ) નીચેના પ્રશ્નોનાં ટૂંકા ઉત્તર આપો (છ માંથી કોઈ પણ ચાર). ૦૪
(i) ભૂકેન્દ્રની જાડાઈ દર્શાવો.
(ii) સંવહન એટલે શું?
(iii) પૃથ્વીમાં ચુંબકીય ક્ષેત્ર શા માટે હાજર છે?
(iv) આંતરિક ભૂકેન્દ્ર શા માટે કઠણ છે?
(v) નિકલ માટે ક્યુરી ઉષ્ણતામાન આપો.
(vi) ખંડિય પ્રવહનનો ભૌગોલિક પુરાવો દર્શાવો.
3. (અ) ભૂસ્તરીય પરિબળ તરીકે પવનની ચર્ચા કરો. ૧૪
અથવા
(અ) (i) ઉદાહરણો સહિત જીવજન્ય ખવાણ. ૦૯
(ii) દ્વિમઅશ્માવલિઓ. ૦૯
(બ) નીચેના પ્રશ્નોનાં ટૂંકા ઉત્તર આપો (પાંચમાંથી કોઈ પણ ત્રણ). ૦૩
(i) ઘોવાણની વ્યાખ્યા આપો.
(ii) સરીવરીના બે પ્રકારો દર્શાવો.
(iii) સંગમની વ્યાખ્યા આપો.
(iv) સરીવરજન્ય નિક્ષેપો શું છે?
(v) પડખવાણની વ્યાખ્યા આપો.
4. (અ) ખનિજોના વર્ગીકરણો ઉપર નોંધ લખો. ૧૪
અથવા
(અ) (i) ખનિજોમાં સંભેદ અને ભંગસપાટી. ૦૯
(ii) ખનિજોમાં રંગ અને ચળકાટ. ૦૯
(બ) નીચેના પ્રશ્નોનાં ટૂંકા ઉત્તર આપો (પાંચમાંથી કોઈ પણ ત્રણ). ૦૩
(i) અસાર ખનિજની વ્યાખ્યા આપો.
(ii) રાસાયણિક બંધ શું છે?
(iii) પાઈરાઈટ અને ગેલીનાની વિશિષ્ટ ઘનતા આપો.
(iv) બોટ્રીઓઈડલ સ્વરૂપની વ્યાખ્યા આપો.
(v) કેલ્સાઈટ અને ટોપાઝની કઠિનતા જણાવો.

1. (A) Describe the origin of the universe. 14
OR
- (A) (i) Principles of Geology as a science. 07
(ii) Hypothesis based on two stars. 07
- (B) Answer the following questions in short (Any four out of six). 04
(i) Name the planet, which is red in colour.
(ii) Mention two branches of Geology.
(iii) Write one scope of Geology.
(iv) Name the scientist, who proposed tidal hypothesis.
(v) State the density of the earth.
(vi) Define evolution of the solar system.
2. (A) Describe radioactivity and age of the earth. 14
OR
- (A) (i) Crust and mantle. 07
(ii) Plate tectonics. 07
- (B) Answer the following questions in short (Any four out of six). 04
(i) State the thickness of core.
(ii) What is convection?
(iii) Why magnetic field is present in earth?
(iv) Why inner core is solid?
(v) Give curie point for nickel.
(vi) Mention geographic evidence of continental drift.
3. (A) Discuss wind as a geological agent. 14
OR
- (A) (i) Biological weathering with examples. 07
(ii) Moraines. 07
- (B) Answer the following questions in short (Any three out of five). 03
(i) Define denudation.
(ii) State two types of lakes.
(iii) Define confluence.
(iv) What are lacustrine deposits?
(v) Define exfoliation.
4. (A) Write a note on classifications of minerals. 14
OR
- (A) (i) Cleavage and fracture in minerals. 07
(ii) Colour and lustre in minerals. 07
- (B) Answer the following questions in short (Any three out of five). 03
(i) Define gangue.
(ii) What is a chemical bond?
(iii) Give specific gravity of pyrite and galena.
(iv) Define botryoidal form.
(v) Give hardness of calcite and topaz.

B.Sc. (Sem.-1) Examination

CC 3 Paper-101

Environmental Science

Time : 2-30 Hours]

March 2019

[Max. Marks : 70

- Q-1 (A) Explain Big-bang theory and formation of Solar system [14]
OR
- (A)1 Discuss Miller's experiment explaining formation of organic molecules [7]
2 Summarize features of five kingdoms described by Whittaker [7]
- (B) Answer any Four in brief [4]
1 The Prokaryotes are believed to have evolved before how many years?
2 What are Endosymbiont?
3 Why development of life seems more convincing in Sea?
4 Give contribution of Louis Pasteur (1861) on spontaneous generation of life
5 What are Heterotrophs?
6 What is Kingdom for organisms being ' Motile, multicellular, eukaryotic, cells devoid of cell walls'?
- Q-2 (A) Write detailed note on characteristics of Vascular plants [14]
OR
- (A)1 Discuss organization in plants explaining Root, Stem and Leaves [7]
2 Discuss features of *Gymnosperm* plants [7]
- (B) Answer any Four in brief [4]
1 Match Living being (a) to corresponding Kingdom (b).
(a) *E. coli*, Rhizopus, Amoeba, Maize, Leopard
(b) *Monera*, *Protista*, *Animalia*, *Plantae*, *Fungi*
2 What are Vascular plants?
3 What are Stomata in plants?
4 Give one each example of Monocot and Dicot plants
5 What is the role of Dermal tissues in plants?
6 Draw the diagram of Fibrous and Tap roots
- Q-3 (A) Give general description of body organization in animals [14]
OR
- (A)1 Explain adaptation of marine animals to land [7]
2 List phyla of kingdom *Animalia* and explain features of any one phylum [7]
- (B) Answer any Three in brief [3]
1 Give meaning of animals being Homeotherms
2 Write two features of successful parasitic animals
3 Name two animals from the phylum *Arthropoda*
4 Mammals belong to which animal phylum?
5 Name a Primitive Marine animal.
- Q-4 (A) Discuss role of microorganisms in elemental cycling with examples [14]
OR
- (A)1 Describe generalized structure of viruses [7]
2 Define fungi and give economic importance of fungi [7]
- (B) Answer any Three in brief [3]
1 Match the Microorganisms (a) with Characteristics (b).
(a) Bacteria, Algae, Fungi, Viruses
(b) Photosynthetic Eukaryotes, Non-photosynthetic Filamentous Eukaryotes, Acellular entities, Unicellular Prokaryotes
2 Give two economic importance of Fungi
3 Give two genus names from group Protozoa
4 Name two diseases spread by drinking water
5 Name two microorganisms playing active role in fixation of atmospheric Nitrogen

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Candidate's Seat No : _____

**B.Sc. (Sem.-1) Examination
CC 3 Paper-101
Bio-Chemistry
March 2019**

Time : 2-30 Hours]

[Max. Marks : 70

Q.1 (A) Define biochemistry and discuss the scope and application of biochemistry in detail (14)

OR

Q.1 (A) Write a note on following:

(i) Central Dogma of life (7)

(ii) RNA world (7)

Q.1 (B) (i) Define the term : (a) Mutation (b) Evolution (2)

(ii) Name two scientist of biochemistry and their contribution (2)

Q.2 (A) Explain colour reaction of carbohydrate . (14)

OR

Q.2 (A) Write a note on following:

(i) Action of hydrogen cyanide on sugar (7)

(ii) Step down reaction of sugar (7)

Q.2 (B) (i) Write the structure of : (2)

(a) α -D Glucose (b) D - Galactose

(ii) Define the term Enantiomers with example (2)

Q.3 (A) Explain Dansyl chloride reaction , Sanger's reaction and Edman's reaction of amino acid (14)

OR

Q.3 (A) Discuss the following:

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(i) Non – protein amino acid (7)

(ii) Decarboxylation reaction of amino acid (7)

Q.3 (B) Write the structure of :

(i) Glutamic acid (ii) Serine (iii) Lysine (3)

Q.4 (A) Write a note on chemical constant of fat (14)

OR

Q.4 (A) Discuss the following :

(i) Oxidation of fatty acid (7)

(ii) Rancidity of fats (7)

Q. 4 (B) Write the structure of :

(i) Stearic acid (ii) Archidonic acid (iii) Staerin (3)

α ————— γ

B.Sc. (Sem.-1) Examination

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Electronics

March 2019

Time : 2-30 Hours]

[Max. Marks : 70

Instruction : Figures to the right indicates full marks.

- 1 (a) (i) Explain the colour code used to specify value & tolerance of the resistor. 7
 (ii) What is thermistor? How many types of thermistor are there? Explain it detail with characteristics. 7

OR

- (i) Write notes on :
 (1) Shunt type ohmmeter 7
 (2) Types of switcher 7
 (b) Answer in short (any four) : 4
 (i) What is the range of a resistor of $100K\Omega \pm 10\%$
 (ii) What is the unit of inductance?
 (iii) What is the unit of capacitance?
 (iv) What is the value of resistor with colour code Orange, Red, Orange, Gold,
 (v) 1μ Henry (micro) is equal to how many henry.
 (vi) Give full form of PCB.

- 2 (a) (i) Explain the working of half wave doubler circuit. 7
 (ii) Explain the working of series positive clipper 7

OR

- (a) (i) Write note on :
 (1) LED 7
 (2) LASER diode 7
 (b) Answer in short (any four) : 4
 (i) Give the full form of LED
 (ii) Draw the symbol of varactor diode
 (iii) What is clipper circuit?
 (iv) Define clamper
 (v) Draw the symbol of photodiode
 (vi) Where the voltage multiplier circuit can be used?

- 3 (a) (i) Explain three point method of calculating harmonic distortion. 7
 (ii) Define voltage gain, current gain & power gain. Explain the method for determining input resistance of an amplifier. 7

OR

- (a) (i) What is "Decibel"? Which are the other equations for "Decibel computation"? Also explain about zero decibel reference level. 7
 (ii) Explain about the use of a voltmeter as a decibel indicator. 7

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(b) Answer in short (any three) :

3

- (i) What would be the input resistance and ideal amplifier?
- (ii) What would be the output resistance of an ideal amplifier.
- (iii) Define "Bel"
- (iv) Define "conversion efficiency"
- (v) Name other types of amplifier distortion.

4 (a) (i) Perform 2'S complement addition

7

(1) -76 & -21

(2) 37 & -82

(ii) Perform 2'S complement subtraction

7

(1) -64 & 35

(2) 82 & 37

OR

(a) (i) Convert

7

(1) $AB\ 37.C6_{(16)} = \underline{\hspace{2cm}}$ (2) = $\underline{\hspace{2cm}}$ 10

(2) $9345.63_{(10)} = \underline{\hspace{2cm}}$ (2) = $\underline{\hspace{2cm}}$ 16

(ii) Perform binary subtraction

7

(1) $1\ 0\ 1\ 1\ 0\ 1\ 0\ 1 - 0\ 1\ 1\ 0\ 1\ 1\ 0\ 1$

(1) $1\ 1\ 0\ 0\ 1\ 1\ 0\ 0 - 0\ 1\ 1\ 1\ 0\ 1\ 1\ 1$

(b) Answer in short (any three) :

3

- (i) What is ASCII?
 - (ii) $A.(A + B) = \underline{\hspace{2cm}}$
 - (iii) Give i's complement of 23
 - (iv) $A.1 = \underline{\hspace{2cm}}$
 - (v) $\overline{A \cdot B} = \underline{\hspace{2cm}}$
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Computer Science

March 2019

Time : 2-30 Hours]

[Max. Marks : 70

- Q-1 A Write the following.
- (i) Explain various generation of computer with it's examples and characteristics. (14)

OR

- (i) What is primary and secondary memory? Explain in detail also give the classification between hardware and software. (14)
- Q-1 B. Write down the full forms.(Any four out of six) (4)

1.HDD 2.DVD 3.OCR 4.VDU 5.LCD 6.TFT

- Q-2 A Write the following.
- (i) Explain CPU with it's components in brief. (14)

OR

- (i) What is network? Explain types of networks. Also explain the topologies of network in brief. (14)
- Q-2 B. Short questions(Any four out of six) (4)

1 What is container tag?

2. List out the attributes of table tag.

3. HREF stands for...

4. List out any four formatting tags.

5. URL stands for..

6. What is use of letter spacing?

- Q-3 A Write the following.
- (i) What is hexadecimal conversion? Convert $(1AC)_{16}$ to decimal. Also perform the addition between $BC5A9 + EA675$ (14)

OR

- (i) What is HTML? Explain structure of HTML in detail. Also explain the categories of tags. (14)

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Q-3 B. Short questions(Any three out of five) **(3)**

1. What is the use of marquee tag?
2. ASCII stands for...
3. Give the difference between HTML and DHTML.
4. CSS stands for...
5. What is Frame?

Q-4 A **Write the following.**

(i) What is CSS? Explain with it's syntax and give one example. Also give the advantages and disadvantages of it. **(14)**

OR

(i) Explain E-commerce, E-learning, E-banking and E-governance in detail. **(14)**

Q-4 B. Short questions(Any three out of five) **(3)**

1. List out the types of CSS.
2. What is indent in CSS?
3. What is parity bit?
4. DNS stands for...
5. FTP stands for...

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CC 3 Paper 101

Health & Hygiene

March 2019

Time : 2-30 Hours]

[Max. Marks : 70

- Q-1 (A) Write detailed note on determinants of health [14]
OR
- (A)1 Explain key indicators of health [7]
2 Discuss source of health-related data and give its significance [7]
- (B) Answer any Four in brief [4]
1 What is DALY, used to measure the disease burden?
2 What is Crude Death Rate?
3 Which determinative factor is likely to cause Asthama?
4 Name two diseases eradicated from India
5 What level of Health services are available in rural India?
6 Name two diseases spread by mosquito bite
- Q-2 (A) Explain WHO as an organization giving its objectives and role in global health [14]
OR
- (A)1 Write note on activities and functions of CDC in controlling diseases [7]
2 Discuss global initiatives to control Malaria and AIDS by vaccination [7]
- (B) Answer any Four in brief [4]
1 What is government scheme known as PM-JAY?
2 Name two communicable diseases caused by viruses
3 Which agency hosted UNITAID scheme?
4 PATH is vaccination initiative associated with which disease?
5 Name the organization working to control Parasitic and Bacterial infections
6 What is use of Mamata Card issued by the government
- Q-3 (A) Write a detailed note on contraceptives used for birth control [14]
OR
- (A)1 Summarize health care system in India [7]
2 Discuss health factors linked to individual's life-style [7]
- (B) Answer any Three in brief [3]
1 Match the Health-care level (a) with Services (b)
(a) Primary, Secondary, Tertiary
(b) Draining puddles of water, Food and nutrition stocks, Heart surgery
2 Why awareness on hand-washing help controlling diseases.
3 What is Circumcision?
4 Name two sexually-transmitted diseases
5 What is a major cause of infantile death in India?
- Q-4 (A) Write descriptive note on Tobacco addiction and its adverse effects on health [14]
OR
- (A)1 List occupational diseases and explain any two [7]
2 Explain risk factors in relevance to diseases [7]
- (B) Answer any Three in brief [3]
1 Match the Chemical (a) and organ affected (b)
(a) Marijuana, Caffeine, Alcohol
(b) Red eyes (Blurred vision), Brain (Insomnia), Kidneys (More urination)
2 Name a stimulant that activates the CNS
3 Name two harmful chemicals present in cigarette smoke
4 Name two chemicals abused as narcotic drug
5 What is Silicosis?

