I.F.S. EXAM-2015 **C–GEQ–O–HFPB**

GEOLOGY
Paper—II

Time Allowed : Three Hours | *Maximum Marks : 200*

QUESTION PAPER SPECIFIC INSTRUCTIONS

Please read each of the following instructions carefully before attempting questions :

*There are **EIGHT** questions in all out of which **FIVE** are to be attempted.*

*Question Nos. 1 and 5 are compulsory. Out of the remaining **SIX** questions, **THREE** are to be attempted selecting at least **ONE** question from each of the two Sections **A** and **B**.*

Attempts of questions shall be counted in sequential order. Unless struck off, attempt of a question shall be counted even if attempted partly. Any page or portion of the page left blank in the Question-cum-Answer Booklet must be clearly struck off.

All questions carry equal marks. The number of marks carried by a qustion/part is indicated against it.

*Answers must be written in **ENGLISH** only.*

Neat sketches may be drawn, wherever required.

SECTION—A

Q. 1 **Answer the following :—** **10×4=40**

Q. 1(a) Describe various types of twinning in minerals. Comment upon causes of twinning. 10

Q. 1(b) Based on mineralogy, distinguish basic and ultrabasic rocks. 10

Q. 1(c) Describe facies and grades of metamorphism. 10

Q. 1(d) Distinguish between arkose and greywackes and comment upon environment of their formation. 10

Q. 2(a) What is the fundamental unit of silicate structure ? Discuss and classify different types of silicate structures. 20

Q. 2(b) Distinguish between uniaxial and biaxial minerals. 20

Q. 3(a) Using reaction principle, discuss about crystallization of basaltic magma. 20

Q. 3(b) Distinguish perthites and antiperthites and conditions of their formation. 10

Q. 3(c) What is eutectic crystallization ? 10

Q. 4(a) How are sedimentary structures useful to establish the dynamics of deposition of sediments ? 20

Q. 4(b) What do you understand by sphericity and roundness of sedimentary rocks ? 10

Q. 4(c) Describe the matrix and cement of sedimentary rocks. 10

SECTION—B

Q. 5 **Answer the following :—** **8×5=40**

Q. 5(a) Significance of gossan. 8

Q. 5(b) Podiform and stratiform chromite deposits. 8

Q. 5(c) Use of pathfinder elements in mineral exploration. 8

Q. 5(d) Radioactive waste disposal. 8

Q. 5(e) Coordination number and cite mineral examples. 8

Q. 6(a) Enumerate the controls of ore localization. 20

Q. 6(b) Discuss the mechanism for the formation of placer deposits and add a note on their provenance. 10

Q. 6(c) Describe geological setting and oil potential of Bombay High. 10

Q. 7(a) How are soil geochemical prospecting methods useful in the detection of secondary dispersion pattern of copper deposits ? 20

Q. 7(b) Describe the electrical well-logging as applied to the prospecting of ore deposits. 10

Q. 7(c) Discuss the role of floatation reagents in mineral beneficiation. 10

Q. 8(a) Discuss geochemical classification of elements. Comment upon the role of trace elements in magmatic crystallization. 20

Q. 8(b) What are the earthquake parameters and causes of earthquake ? 10

Q. 8(c) Explain the impact of mining on groundwater quality. 10