**A**

**2007 – GG**

**Test Paper Code : GG**

**Time : 3 Hours  Maximum Marks : 300**

## INSTRUCTIONS

1. The question-cum-answer book has **28** pages and has **44** questions. Please ensure that the copy of the question-cum-answer book you have received contains all the questions.
2. Write your **Roll Number, Name** and **the name of the Test Centre** in the appropriate space provided on the right side.
3. Write the answers to the objective questions against each Question No. in the **Answer Table for Objective Questions**, provided on Page No. **9**. Do not write anything else on this page.
4. Each objective question has **4 choices** for its answer : (A), (B), (C) and (D). Only **ONE** of them is the correct answer. There will be **negative marking** for wrong answers to objective questions. The following marking scheme for objective questions shall be used :
   (a) For each objective question, you will be awarded **3 (three)** marks if you have written only the correct answer.
   (b) In case you have not written any answer for a question you will be awarded **0 (zero)** mark for that question.
   (c) In all other cases, you will be awarded **–1 (minus one)** mark for the question.
   (d) Negative marks for objective part will be carried over to total marks.
5. Answer the subjective question only in the space provided after each question.
6. Do not write more than one answer for the same question. In case you attempt a subjective question more than once, please cancel the answer(s) you consider wrong. Otherwise, the answer appearing later only will be evaluated.
7. All answers must be written in blue/black/blue-black ink only. Sketch pen, pencil or ink of any other colour should not be used.
8. All rough work should be done in the space provided and scored out finally.
9. No supplementary sheets will be provided to the candidates.
10. **Logarithmic Tables / Calculator of any kind / cellular phone / pager / electronic gadgets are not allowed.**
11. The question-cum-answer book must be returned in its entirety to the Invigilator before leaving the examination hall. Do not remove any page from this book.

**A**

**2007 – GG**

**READ THE INSTRUCTIONS ON THE LEFT SIDE OF THIS PAGE CAREFULLY**

| ROLL NUMBER | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | |

Name :

Test Centre :

**Do not write your Roll Number or Name anywhere else in this question-cum-answer book.**

I have read all the instructions and shall abide by them.

.....

Signature of the Candidate

I have verified the information filled by the Candidate above.

.....

Signature of the Invigilator

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**IMPORTANT NOTE FOR CANDIDATES**

- **Attempt ALL the 44 questions.**
- **Questions 1-30 (objective questions) carry *three* marks each and questions 31-44 (subjective questions) carry *fifteen* marks each.**
- **Write the answers to the objective questions in the *Answer Table for Objective Questions* provided on page 9 only.**

. Isostasy involves

(A) eustatic change

(B) gravitational balance

(C) magnetic reversal

(D) thermal balance

. The basaltic lava flow having ropy and wavy surface is known as

(A) aa

(B) pahoehoe

(C) tuff

(D) volcanic breccia

. A graded stream is characterized by

(A) increase in erosion relative to deposition

(B) increase in deposition relative to erosion

(C) equilibrium between erosion and deposition

(D) formation of graded bedding

. Continued crystallization of augite after the formation of plagioclase can result in

(A) hyalopilitic texture

(B) ophitic texture

(C) porphyritic texture

(D) trachytic texture

. Barchans are crescent–shaped dunes in which the ends of the crescent

(A) point in the upwind direction

(B) are at right angles to the wind direction

(C) have no relation to the wind direction

(D) point in the downwind direction

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6. A fold in which the hinge line plunges in the direction of dip of the axial plane is

(A) overturned fold

(B) reclined fold

(C) recumbent fold

(D) upright fold

7. Match the plutonic rocks listed in **Group I** with their corresponding volcanic equivalents in **Group II**.

| | **Group I** | | **Group II** |
|---|---|---|---|
| P. | Granite | 1. | Dacite |
| Q. | Granodiorite | 2. | Trachyte |
| R. | Diorite | 3. | Rhyolite |
| S. | Syenite | 4. | Andesite |

(A) P-1, Q-2, R-4, S-3

(B) P-2, Q-1, R-3, S-4

(C) P-3, Q-1, R-4, S-2

(D) P-3, Q-2, R-4, S-1

8. Which of the following is a strike-slip fault?

(A) Normal fault

(B) Reverse fault

(C) Thrust fault

(D) Transform fault

9. Staurolite, andalusite and sillimanite form during progressive regional metamorphism of

(A) arenaceous rocks

(B) siliceous carbonate rocks

(C) basic igneous rocks

(D) argillaceous rocks

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10. The pressure–temperature ranges of the metamorphic facies

**P:** Granulite, **Q:** Zeolite, **R:** Amphibolite, **S:** Greenschist

increase in the order

(A) **Q < R < S < P**

(B) **Q < P < R < S**

(C) **Q < S < R < P**

(D) **Q < R < P < S**

11. Match the following landforms **(Group I)** with the corresponding geological agents **(Group II)**.

| | **Group I** | | **Group II** |
|---|---|---|---|
| P. | Point Bar | 1. | Sea |
| Q. | Cirque | 2. | River |
| R. | Yardang | 3. | Glacier |
| S. | Berm | 4. | Wind |

(A) P-2, Q-3, R-4, S-1

(B) P-3, Q-1, R-4, S-2

(C) P-2, Q-1, R-3, S-4

(D) P-3, Q-2, R-1, S-4

12. A geomorphic feature produced at divergent plate boundary is

(A) folded mountain belt

(B) guyot

(C) island arc

(D) oceanic ridge

13. Which of the following sedimentary rocks is/are formed by chemical precipitation?

**P :** limestone **Q :** chert **R :** sandstone **S :** shale

(A) **P** only

(B) both **P** and **Q**

(C) both **P** and **R**

(D) both **Q** and **S**

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4. A mineral with patchy blue colour and variable hardness is

(A) azurite

(B) kaolinite

(C) kyanite

(D) sillimanite

5. The occurrence of ammonites in a sequence suggests

(A) Cenozoic age and freshwater environment

(B) Cenozoic age and marine environment

(C) Mesozoic age and freshwater environment

(D) Mesozoic age and marine environment

6. **Group I** contains some minerals and **Group II** gives a list of crystal systems. Find the correct match.

| | **Group I** | | **Group II** |
|---|---|---|---|
| P. | Gypsum | 1. | Hexagonal |
| Q. | Beryl | 2. | Triclinic |
| R. | Galena | 3. | Monoclinic |
| S. | Axinite | 4. | Cubic |

(A) P-3, Q-2, R-4, S-1

(B) P-1, Q-3, R-4, S-2

(C) P-2, Q-1, R-4, S-3

(D) P-3, Q-1, R-4, S-2

7. Which of the following sedimentary structures is erosional in nature?

(A) Cross-stratification

(B) Flute casts

(C) Graded bedding

(D) Ripple marks

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18. The presence of reef corals in a sedimentary sequence indicates that deposition took place
    (A) near the equator
    (B) near the poles
    (C) in fluvial environment
    (D) in deep sea environment

19. Minerals in which of the following pairs do **NOT** form a natural association?
    (A) Corundum – Sillimanite
    (B) Nepheline – Quartz
    (C) Olivine – Clinopyroxene
    (D) Olivine – Orthopyroxene

20. Match the organisms listed in **Group I** with their respective symmetry elements in **Group II**.

| **Group I** | **Group II** |
|---|---|
| P. Brachiopods | 1. Asymmetric |
| Q. Pelecypods | 2. Plane of symmetry bisects the two valves |
| R. Echinoids | 3. Plane of symmetry lies between the two valves |
| S. Helically coiled gastropods | 4. Five-fold radial symmetry |

    (A) P-1, Q-2, R-3, S-4
    (B) P-4, Q-1, R-2, S-3
    (C) P-3, Q-4, R-2, S-1
    (D) P-2, Q-3, R-4, S-1

21. Scratches produced on the fault plane are known as
    (A) boudins
    (B) mullions
    (C) plumose structure
    (D) slickensides

22. Which of the following processes of ore formation produces gold deposits in the form of reef?
    (A) Hydrothermal
    (B) Magmatic injection
    (C) Magmatic segregation
    (D) Supergene enrichment

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23. Match the fossil taxa listed in **Group I** with their characteristic morphological features in **Group II**.

| | **Group I** | | **Group II** |
|---|---|---|---|
| P. | *Paradoxides* | 1. | Two pendent stipes |
| Q. | *Didymograptus* | 2. | Sinistral coiling |
| R. | *Physa* | 3. | Genal spines |
| S. | *Ceratites* | 4. | Sutures with undivided saddles |

(A) P-3, Q-2, R-4, S-1

(B) P-3, Q-1, R-2, S-4

(C) P-2, Q-1, R-4, S-3

(D) P-2, Q-1, R-3, S-4

24. Which of the following stratigraphic units contains dinosaur fossils?

(A) Lameta

(B) Muth Quartzite

(C) Siwalik

(D) Subathu

25. Beach placers in India are an important source of

(A) copper

(B) lead

(C) thorium

(D) uranium

26. The reservoir rock for petroleum in Bombay High is

(A) feldspathic sandstone

(B) graywacke

(C) limestone

(D) orthoquartzite

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27. Match sedimentary formations in **Group I** with their corresponding ages in **Group II**.

| | **Group I** | | **Group II** |
|---|---|---|---|
| P. | Maleri | 1. | Oligocene |
| Q. | Karewa | 2. | Plio-Pleistocene |
| R. | Ariyalur | 3. | Cretaceous |
| S. | Barail | 4. | Triassic |

(A) P-1, Q-2, R-3, S-4

(B) P-2, Q-1, R-4, S-3

(C) P-4, Q-3, R-2, S-1

(D) P-4, Q-2, R-3, S-1

28. Which of the following rocks can form good aquifers?

(A) Sandstone and highly jointed granite

(B) Sandstone and massive granite

(C) Sandstone and shale

(D) Shale and massive granite

29. Of the following alternatives, the most suitable condition for a road cut in a hilly terrain is where the foliations

(A) are vertical

(B) dip away from the slope

(C) dip towards the slope at high angle

(D) dip towards the slope at low angle

30. Which of the following series of stratigraphic units is arranged in the order from older to younger age?

(A) Cheyair – Rewa – Sausar – Gondwana

(B) Sausar – Cheyair – Rewa – Gondwana

(C) Gondwana – Rewa – Cheyair – Sausar

(D) Rewa – Gondwana – Sausar – Cheyair

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QUESTION-CUM-ANSWER BOOK CODE **A**

# *Answer Table for Objective Questions*

**Write the Code of your chosen answer only in the 'Answer' column against each Question No. Do not write anything else on this page.**

| Question No. | Answer | Do not write in this column | Question No. | Answer | Do not write in this column |
|---|---|---|---|---|---|
| 01 | | | 16 | | |
| 02 | | | 17 | | |
| 03 | | | 18 | | |
| 04 | | | 19 | | |
| 05 | | | 20 | | |
| 06 | | | 21 | | |
| 07 | | | 22 | | |
| 08 | | | 23 | | |
| 09 | | | 24 | | |
| 10 | | | 25 | | |
| 11 | | | 26 | | |
| 12 | | | 27 | | |
| 13 | | | 28 | | |
| 14 | | | 29 | | |
| 15 | | | 30 | | |

**FOR EVALUATION ONLY**

| | | | |
|---|---|---|---|
| No. of Correct Answers | | Marks | ( + ) |
| No. of Incorrect Answers | | Marks | ( – ) |
| Total Marks in Question Nos. 1-30 | | | ( ) |

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