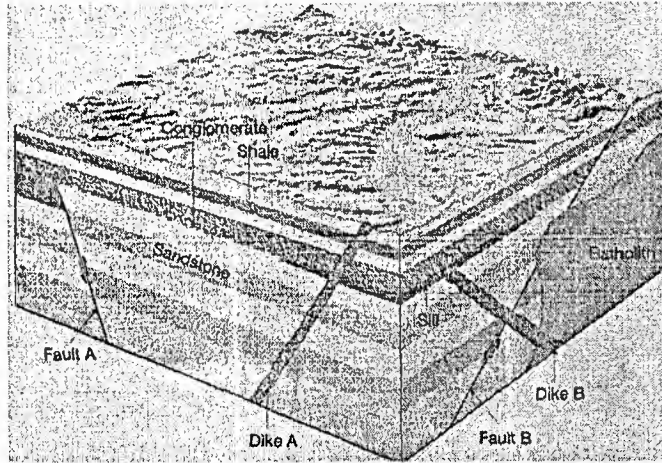
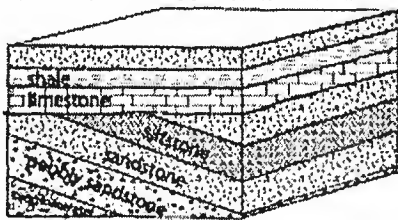


**Section A:** All questions are mandatory.

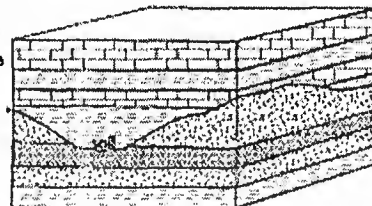
1. Study the diagram below. Write a brief geological history of the area applying the principles of original horizontality and cross-cutting relationship. 4



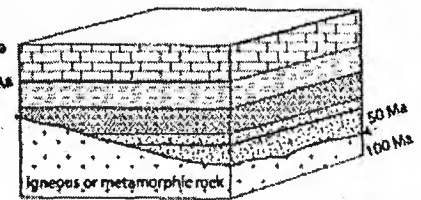
2. What are unconformities? Identify the type of unconformity in the diagrams below with justification. 4



(a)



(b)



(c)

**Section B:**

3. Answer any 3 questions. Use suitable sketches, if necessary, to illustrate your answer. 4 x 3 = 12:

- Explain the terms 'cratons', 'mobile belts' and 'platforms'. Give suitable examples.
- What are the important features of 'marker/key beds'? What are 'type sections'?
- What are the main differences between Eastern Dharwar craton and western Dharwar craton?
- Illustrate the different types of stratigraphic correlation techniques.

**Section C.**

4. All questions are mandatory. 1 x 10 = 10

- Dhanjori basin is important for iron ore deposit. True or false?
- U mineralization is found along the Singhbhum Shear Zone/Chitradurga Thrust/Central Indian Tectonic Zone/Sukinda thrust. Which one is the right answer?
- Sargur Group is unconformably overlying the Peninsular Gneiss. True or false?
- Sukma Group in Bastar craton contains quartzite-carbonate-pelite sequence. This is indicative of deep marine sequence/tectonically active arc environment/shallow platform deposit. Choose the right answer.
- Sonakhan greenstone belt in Bastar craton is Palaeoarchaeon/Mesoarchaeon/Neoarchaeon in age. Choose the right answer.
- Which of the following basin contains alternate basalt and quartzite units? Jagannathpur/Bailadiala/Simlipal/Nandgaon.
- Which of the following granite contains Cu deposit? Malanjkhanda/Dongargarh/Singhbhum/Closepet.
- Bimodal volcanism is characteristic of which unit? Dharwar/Dongargarh/Iron Ore Group/Bengpal.
- Oldest dated rock in the Earth is 3.8/3.9/4.2/4.0 Ga old. Choose the right answer.
- High-Mg mantle derived volcanic rocks (komatiites) are mostly restricted to Early Earth. The likely reason is absence of plate tectonics/higher mantle temperature/more thick crust/meteorite bombardment. Choose the right answer.

S. Dey 19.02.2019