



- Notes :
1. Answer **three** question from Section A and **three** question from Section B.
 2. Due credit will be given to neatness and adequate dimensions.
 3. Illustrate your answer necessary with the help of neat sketches.
 4. Use of pen Blue/Black ink/refill only for writing the answer book.

SECTION - A

1. Write down the sources, classification & uses of waxes. Give the production of paraffin wax from crude petroleum. **13**
- OR**

2. Discuss the properties, production & uses of **13**
i) Core oil. ii) Lubricating grease. iii) Cutting oil.
3. Give an account of properties, production & uses of **13**
i) Japan wax ii) Esparto wax
iii) Carnauba wax iv) Candelilla wax
- OR**

4. Discuss the chemistry & mechanism of fat splitting. Give a detail account of Twitchell fat splitting process. Also discuss the parameters affecting the process. **13**
5. What are the essential characteristics of "face powder". Discuss the raw materials & production of loose face powder (50 kg/day). **14**
- OR**

6. Discuss about **any two**. **14**
i) Bee's wax. ii) Microcrystalline wax.
iii) Testing of wax.

SECTION - B

7. Give an account of raw materials & manufacturing process of Lipstick in detail. **13**
- OR**

8. Discuss the importance of fatty acids in the following field. **13**
i) Pharmaceutical industries. ii) Leather industries.
iii) Food industries. iv) Surface coating industries.
9. Discuss the essential characteristics, raw materials and method of production of shaving cream in detail. **13**
- OR**

10. Give preparation, properties & uses of **13**
i) Sebacic acid ii) HCO
in detail.
11. Give an account of raw materials, properties and method of manufacture of "Antidandruff Shampoo" in detail. **14**
- OR**

12. Discuss about **any two**. **14**
i) TRO. ii) Twitchell fat splitting. iii) Testing of shampoo.
