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Diploma in Pharmacy 1st Year
Pharmaceutics
Experiment

To demonstrate the disintegration test of the tablets as per the monographs.

Aim:

To demonstrate the disintegration test of the tablets as per the monographs.

Reference :

‘ Dr. Gupta G.D , Dr. Sharma Shailish , Dr. Sharma Neelam’ “Practical Manual of Pharmaceutics” Published by Nirali Prakashan, Page no 140 – 143

Apparatus and Materials Required :

Tablets and US.P. disintegration device.

Theory :

A drug in solution form is readily available to the body. Disintegration is the first important step involving the breakdown of tablet into smaller particles or granules. The U.S.P. disintegration device utilises 3 inches long 6 glass tubes which are open at the top and held against a 10 mesh screen at the bottom end of the basket rack assembly.

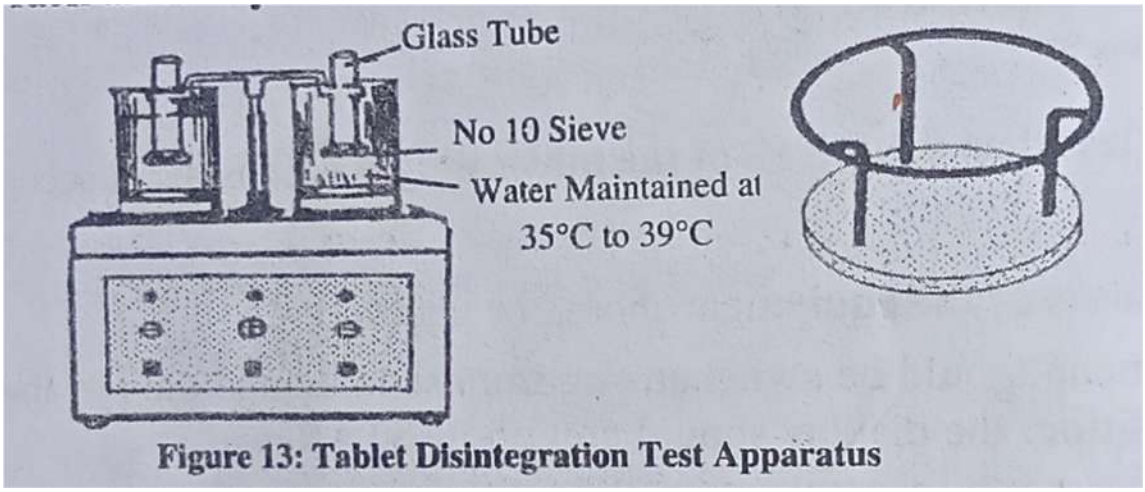

Figure 13: Tablet Disintegration Test Apparatus

The disintegration test is performed to find out the disintegration time of a tablet. This test is very important and necessary for all coated or uncoated tablets to be swallowed because the dissolution rate depends upon the disintegration time which ultimately affects the absorption rate of drugs.

Disintegration Time

For Uncoated Tablet: 5-30 minutes

For Coated Tablet: 1-2 hours.

Table 13.8 enlists the disintegration time (in minutes) for different tablets as per the B.P

Table 2: B.P. Limits for Disintegration Time of Tablets

Tablets	Disintegration Time (min)
Uncoated tablets	15
Coated tablets	60
Effervescent tablets 5	5
Soluble tablets	3
Dispersible tablets	3
Orodispersible tables 3	3
Gastro-resistant tablets 60	60
Oral lyophilisates	3

Procedure :

1) Disintegration test involves placing a tablet in each tube, and keeping the basket rack in a beaker filled with 1 litre of water or simulated gastric fluid maintained at 37"+2°C temperature.
2) On moving upward the tablet should remain 2.5cm below the liquid surface and on downward movement, the tablet should remain 2.5cm above the bottom of the beaker.
3) The basket assembly is moved up and down (using a standard motor) through a distance of 5-6cm at a frequency of 28-32 cycles per minute.

4) Floating of the tablets can be prevented by placing perforated plastic discs on cach tablet.
5) According to the test, the tablet must disintegrate and all particles must pass through the 10 mesh screen in the time specified.
6) A soft mass is obtained as residue.

Result :

The disintegration test of the tablets as per the monographs was performed.

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