





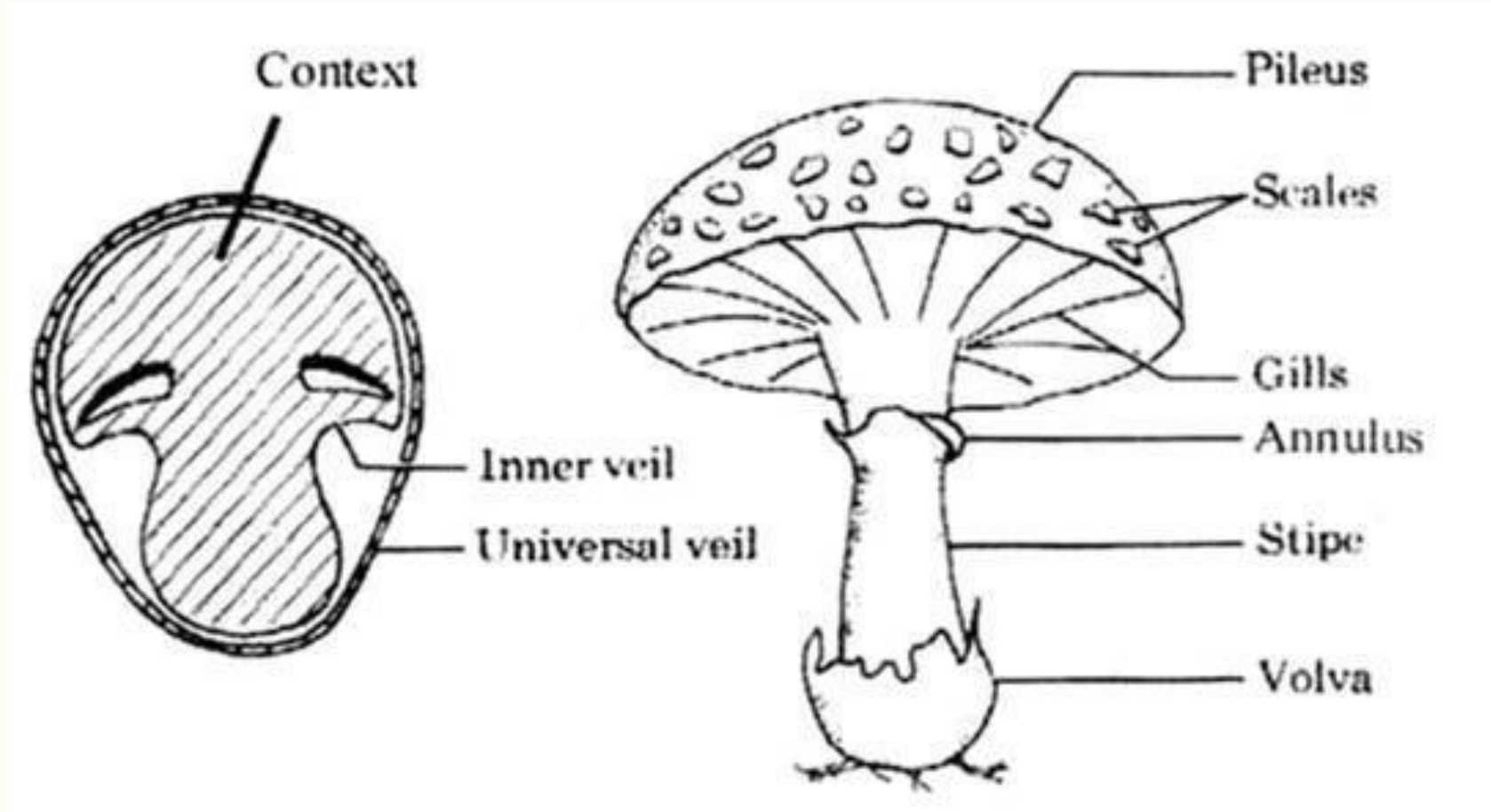
# **MORPHOLOGY OF** **MUSHROOM**



The mycelium of the fungus is present in the substratum and produce fruiting bodies when the conditions are conducive. The fruit bodies begin as tiny knob of tissue arising from the underground mycelium. It grows into a button, which later enlarges to form a well-developed fruiting body. The fruiting body of the mushroom consists of a stem (Stipe), which supports as expanded, umbrella-shaped cap (Pileus).

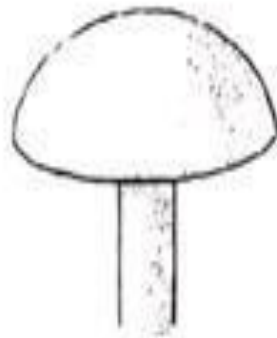


On the underside of the umbrella are the gills or lamellae, which in the young stage are enclosed by a membrane that extends from the margin of the pileus to stipe. This membrane is known as Partial veil and usually tears around the margin of the pileus as the latter expands but remains attached to the stipe where it forms a ring (Annulus). In some mushrooms, the young buttons are covered by a membrane called Universal veil or General veil. When the cap expands, the veil is torn and the remnants at the base form Volva and some of the fragments remain attached to the pileus surface





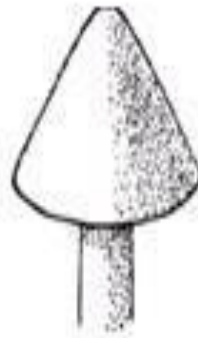
## Mushroom cap shapes



convex



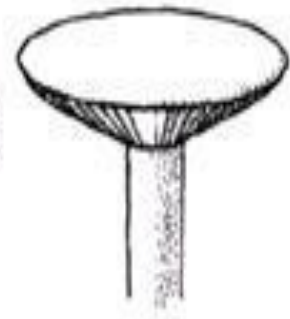
bell-shaped



conical



knobbed



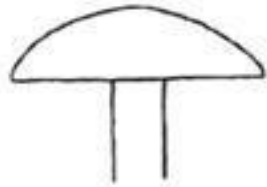
flat



sunken



### Mushroom cap surfaces



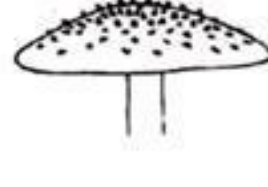
smooth



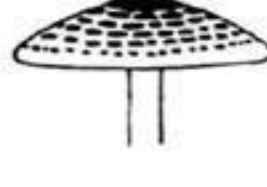
velvety



hairy or fibrous



raised scales

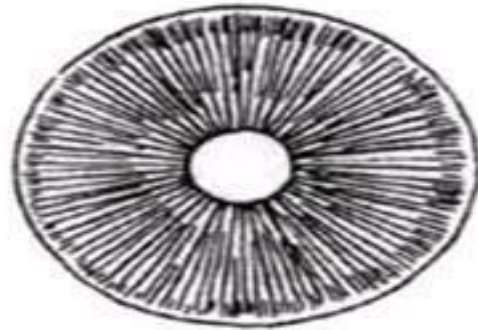


flat scales

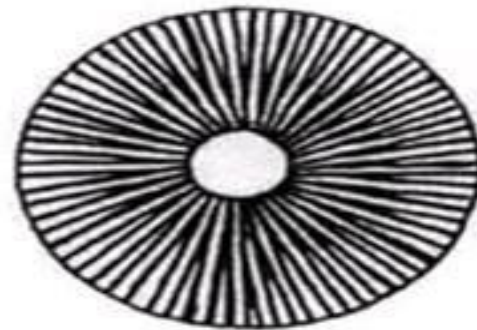


patches

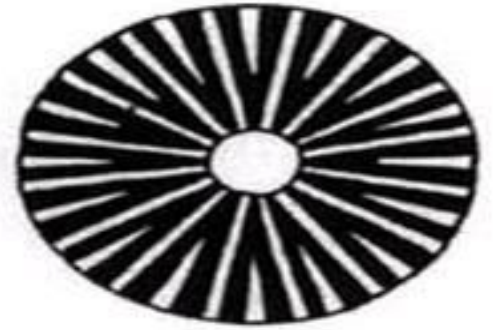
### Gill spacing



crowded



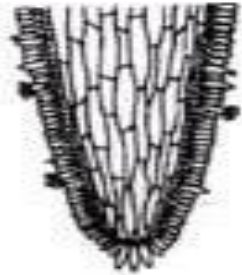
close



distant



### Gill tissue arrangements



parallel



interwoven



divergent



### ***1. Agaricus bisporus: The Button Mushroom***

Cap: 3-16 cm, convex to broadly convex or nearly flat in age; dry; smooth or with pressed-down or small scales; white in some varieties, brown in others. Gills free from the stem; close; pinkish to pinkish brown at first, becoming dark brown to blackish. Stem 2-8 cm long; 1-3 cm. thick; sturdy; more or less equal; smooth or with small scales below the ring; white, often bruising brownish; with a ring that sometimes disappears in maturity. Flesh  $\rightarrow$  white and firm; usually bruising and staining brownish (see top illustration). Odour and taste pleasant. Chemical Reactions -cap not yellow with KOH. Spore print brown .Microscopic Features -spores 5.5-8.5 x 4-6.5  $\mu$ ; elliptical; smooth. Basidia 2-spored.





### ***1. Pleurotus spp.:*The Oyster mushroom**

The cap of oyster mushroom is tongue shaped , maturing to a shell shaped form , 50-150 mm in diameter , whitish to grey to blue grey in colour . Flesh is thin and white, margin is occasionally wavy, gills are white, recurrent, broadly spaced, stem attached in an off - centred fashion and is short at first and absent in age. Spores are whitish to lilac grey in mass, mycelium whitish, fast growing rhizomorphic to linear. Basidia tetrapolar, producing 4 haploid spores, heterothallic, clamp connections present. Because of the allergic nature of spores, some spore less strain has also been developed.



### **1. *Volvariella* spp.: The Paddy straw mushroom**

Mushrooms are white initially, become dark tan in colour as the veil teases and then changes to a pale tan with age. Fruiting bodies are small when young, enveloped by a sheath like universal veil, which soon breaks as fruit bodies mature, leaving an irregular cup-like sack at the base of the stem known as volva. Cap 5-15 cm broad, egg shaped and expands to campanulate or convex with slight umbo. Gills are free, white first and soon pinkish, spores are pinkish to pinkish brown in mass,  $7.5-9 \times 4-6 \mu$  in size. Stem 4-20 cm long, solid, smooth and white to yellowish in colour. Stem base is encased in a thick volva. Basidia are tetrapolar, producing four haploid spores, primary homothallic, clamp connections are present, form cheilocystidia, pleurocystidia and chlamydospores.



**Thank you..**