

The mitotic division starts, zygote moves through isthmus of the oviduct - called cleavage towards the uterus.

2, 4, 8, 16 daughter cell called Blastomeres are formed.

The embryo with 8 to 16 blastomeres is called a morula.

↓ divide  
blastocyst & moves further into uterus.

The blastomeres in the blastocyst are arranged in to outer layer called Trophoblast & an inner group of cells attached to trophoblast - called inner cell mass.

The trophoblast layer then gets attached to the endometrium & the inner cell mass differentiated as the embryo.

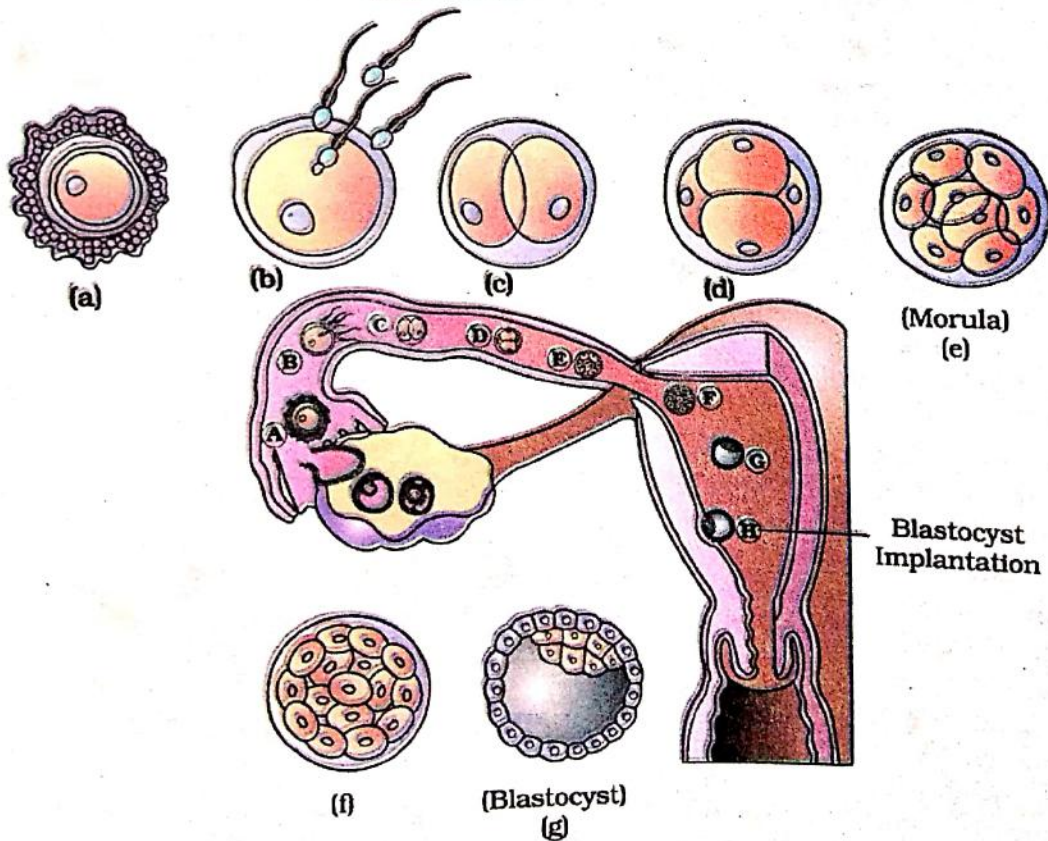
After attachment, the uterine cell divide - covers the blastocyst.

It becomes embedded in the endometrium of the uterus. This is called Implantation.

& it leads to pregnancy.


One has to remember that the sex of the baby has been determined at the stage itself. Let us see how? As you know the chromosome pattern in the human female is XX and that in the male is XY. Therefore, all the haploid gametes produced by the female (ova) have the sex chromosome X whereas in the male gametes (sperms) the sex chromosome could be either X or Y, hence, 50 per cent of sperms carry the X chromosome while the other 50 per cent carry the Y. After fusion of the male and female gametes the zygote would carry either XX or XY depending on whether the sperm carrying X or Y fertilised the ovum. The zygote carrying XX would develop into a female baby and XY would form a male (you will learn more about the chromosomal patterns in Chapter 5). That is why, scientifically it is correct to say that the sex of the baby is determined by the father and not by the mother!

The mitotic division starts as the zygote moves through the isthmus of the oviduct called **cleavage** towards the uterus (Figure 3.11) and forms 2, 4, 8, 16 daughter cells called **blastomeres**. The embryo with 8 to 16



**Figure 3.11** Transport of ovum, fertilisation and passage of growing embryo through fallopian tube.

blastomeres is called a morula (Figure 3.11e). The morula continues to divide and transforms into blastocyst (Figure 3.11g) as it moves further into the uterus. The blastomeres in the blastocyst are arranged into an outer layer called **trophoblast** and an inner group of cells attached to trophoblast called the **inner cell** mass. The trophoblast layer then gets attached to the endometrium and the inner cell mass gets differentiated as the embryo. After attachment, the uterine cells divide rapidly and covers the blastocyst. As a result, the blastocyst becomes embedded in the endometrium of the uterus (Figure 3.11h). This is called **implantation** and it leads to pregnancy.



Trophoblast  
Inner Cell Mass  
↓  
embryo