

# METAMERISM

❖ When segmentation in bilateral animal, such as annelids, involves a longitudinal division of body into linear series of similar sections, called **METAMERIC SEGMENTATION/ METAMERISM**.

❖ each section is called **METAMERE**

❖ Each metamere typically repeats some/ all of the various organ

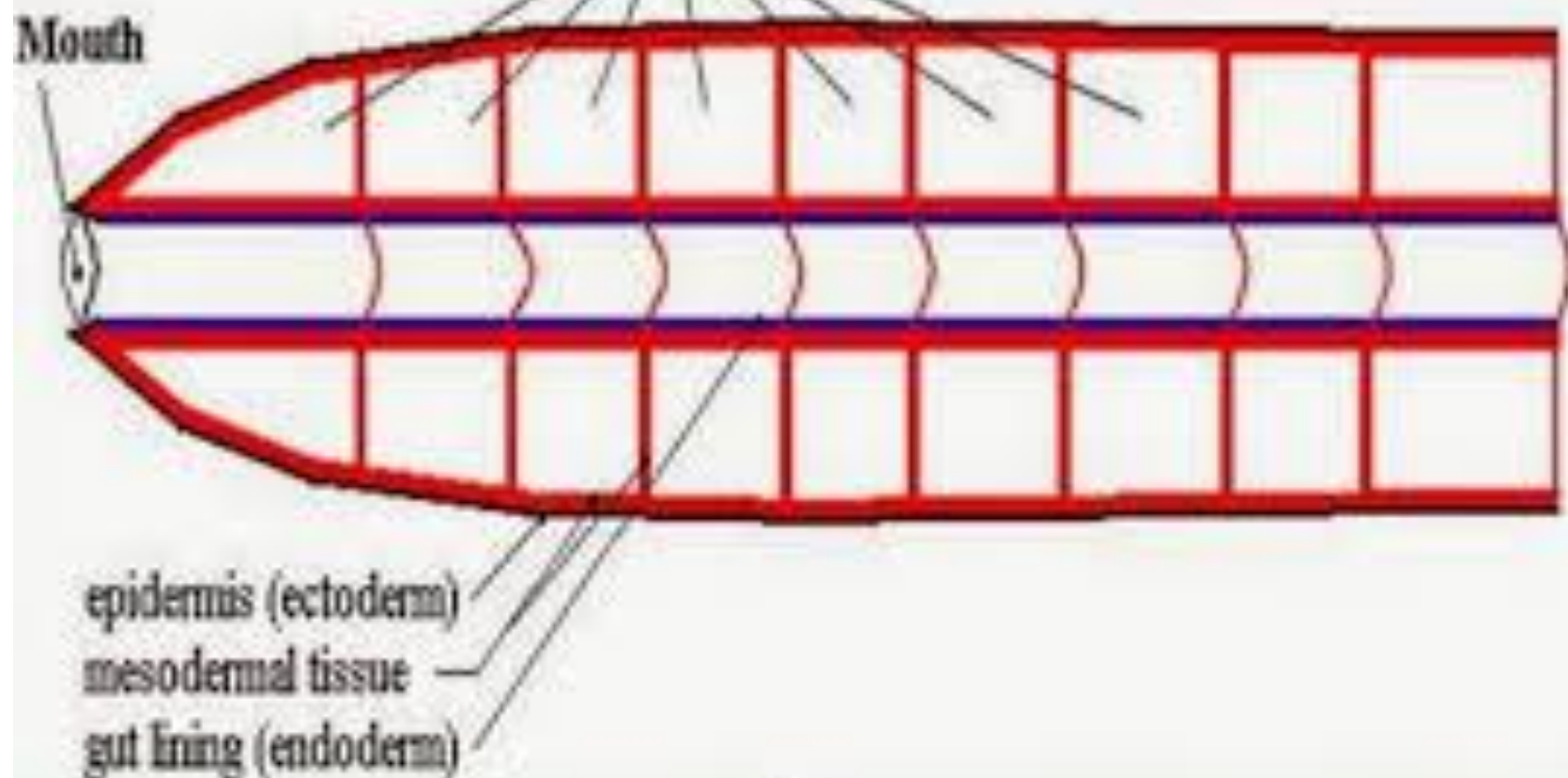
❖ gut, blood vessel, nerves extend through entire body length

❖ gonads repeated in each / few segments only

❖ prostomium & pygidium – no metamerism seen

Coelom in each segment

Mouth



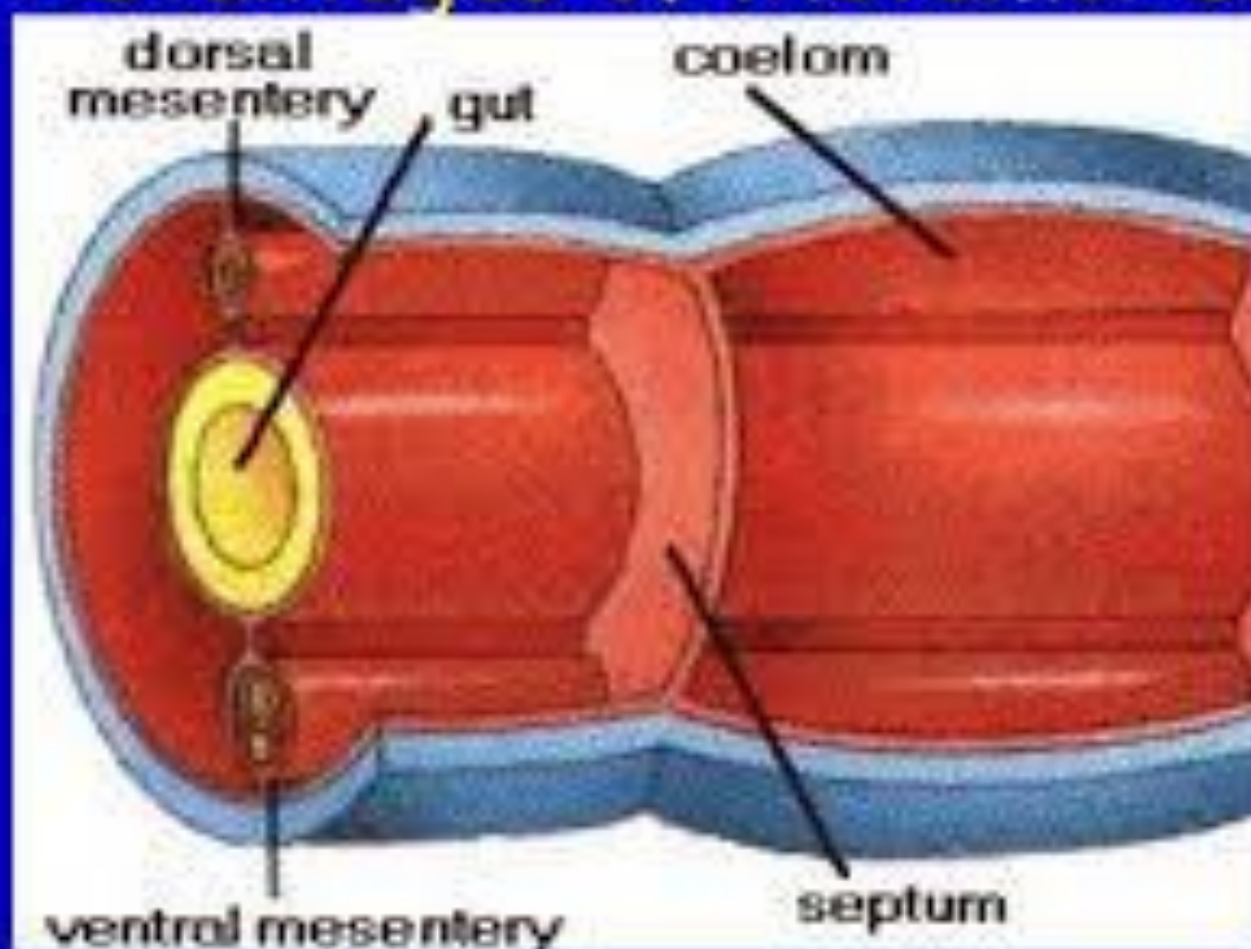
# EXTERNAL METAMERISM & INTERNAL METAMERISM

- Common earthworm is a good example of both external & internal metamerism
- its body consist of great number of similar segments
- all body organs, such as musculature, setae, blood vessel, nerves, gonads are repeated segmentally
- even coelom divided into segmental compartments by septa
- only digestive tract remain unaffected
- in ARTHROPODA metamerism is chiefly external
- in man & other vertebrate metamerism is internal

# COMPLETE & INCOMPLETE METAMERISM

- in annelid metamerism is complete
- metameres are essentially alike/ homonomous
- each having segmental blood vessels, nerves, nephridia
  
- this condition called- **HOMONOMOUS METAMERISM**
- arthropoda & vertebrates show incomplete metamerism
  
- metameres of different regions of their body become greatly dissimilar
- called- **HETERONOMOUS METAMERISM**

## Advantages of Metamerism:



# SIGNIFICANCE OF METAMERISM

- breaking up of body into metameres would facilitate swimming movement
- helps in locomotion
- coordination of muscular action & fluid-filled coelomic compartments cause efficient swimming & creeping
- fluid filled coelomic compartments provide hydrostatic skeleton for burrowing
- opportunity for different segments to specialize for different function

# PSEUDOMETAMERISM

- In tapeworm
- it is superficial segmentation
- true segment of annelids are laid down in embryonic stage
- proglottids of tapeworm are not true metameres
- complete reproductive individuals produced by budding