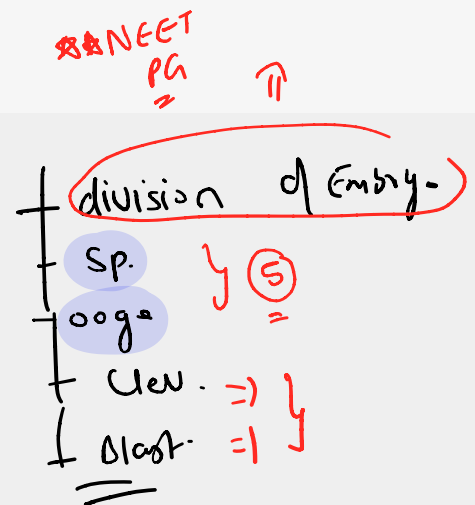
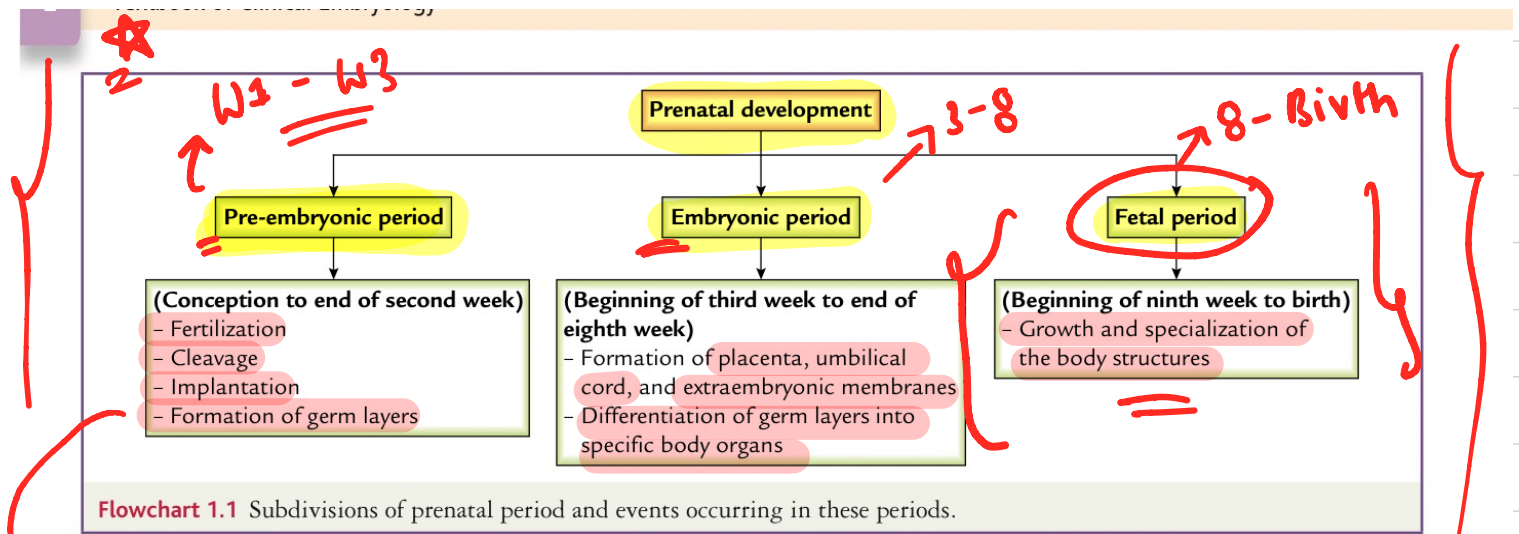


Class - 2

Embryology :-



Garvit Jain



→ Gastrulation . (3 Marks)

Division of Embryology.

#) Cell cycle

•) Mitosis

•) Meiosis

[I
II]

Never
asked.
=

Epiblast

$5 \rightarrow 3\frac{1}{2}$ (1)

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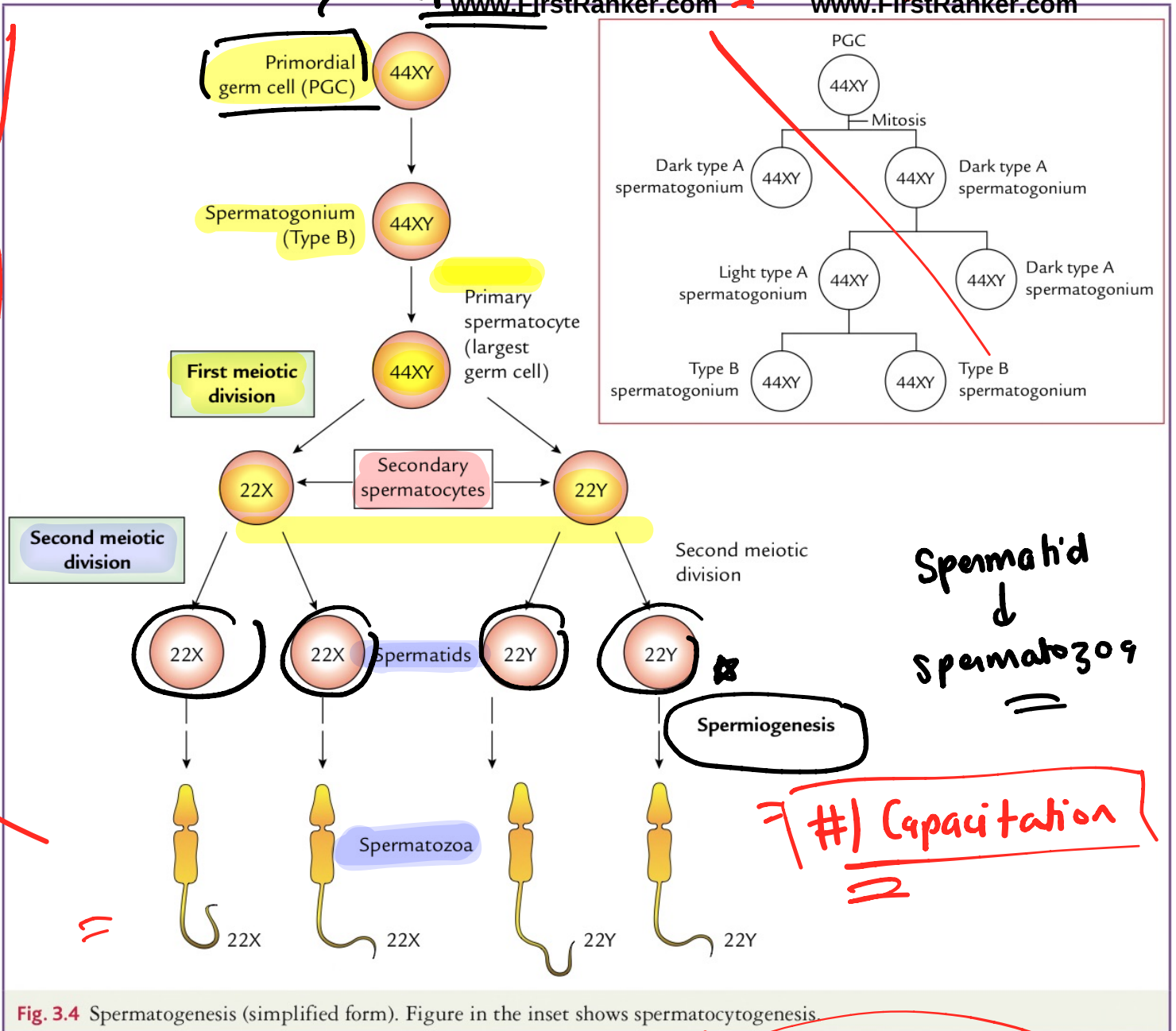


Fig. 3.4 Spermatogenesis (simplified form). Figure in the inset shows spermatocytogenesis.

★ key points -
Spermatogenesis

Spermiogenesis

Clinical

+

$4\frac{1}{2}$

Clinical Correlation

Abnormal sperms: The abnormality of sperms is common as compared to the oocytes. Morphologically for clinicians the sperm consists of two parts of head and tail.

Types of abnormalities are as under.

1. **Morphological abnormalities**
 - (a) Head and tail of sperms may be abnormal (viz., two heads, two tails)
 - (b) Sperms may be giant or dwarf
 - (c) Sperms may be joined
2. **Immotility:** For potential fertility, 50% sperms should be motile after 2 hours of ejaculation and some should be motile after 24 hours.
3. **Genetic abnormalities:** Sperm having abnormal chromosomal content (rare as compared to the oocytes).

xxx

Ovum

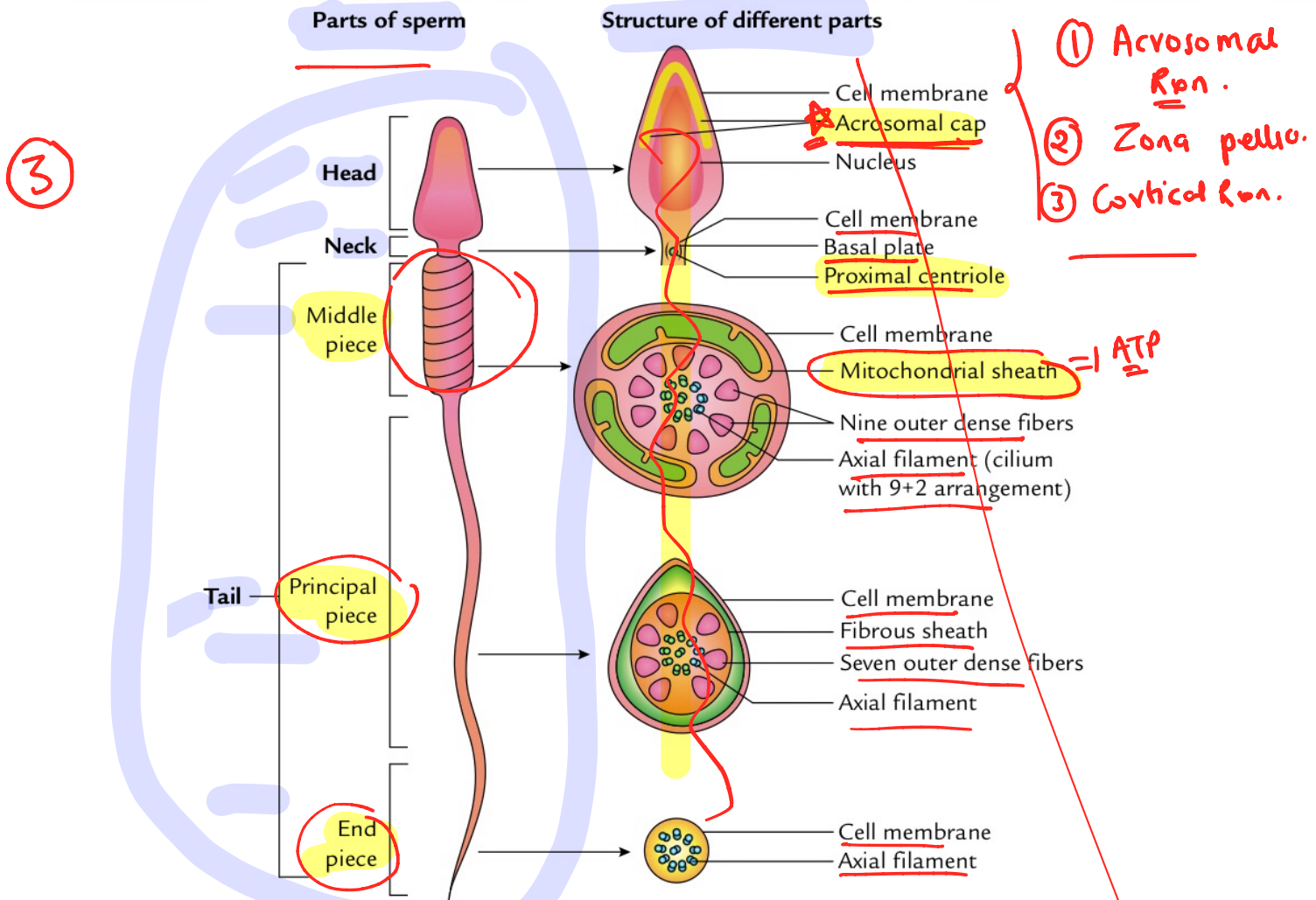
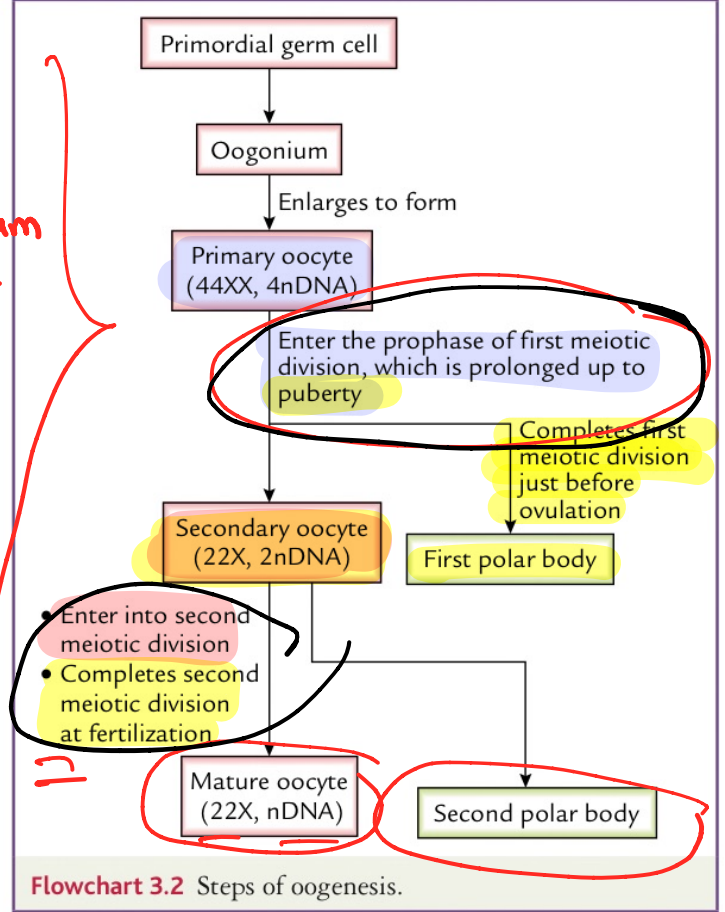
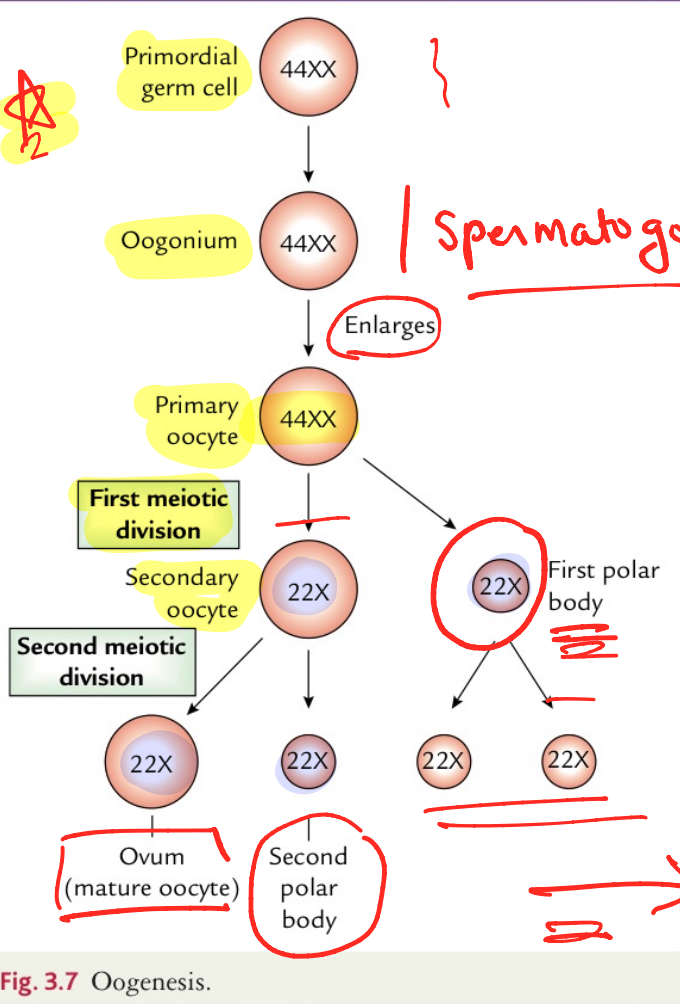


Fig. 3.5 Human sperm. The parts of mature sperm are shown on the left side whereas the sections through the head, neck, middle piece, principal piece, and end piece along with their composition are shown onto the right side.



Q) NEET PG.

9v fertili

No.

1:0
2:0
ovum

None of the

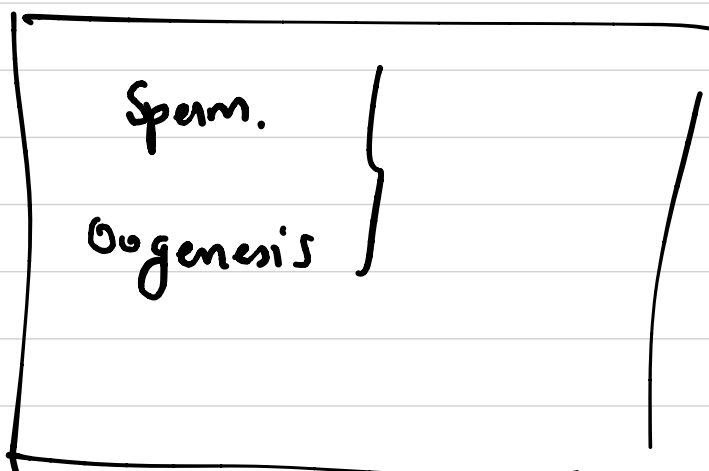
Embryonic → 7million

Birth → 6-8 lakh

Puberty → 40,000



Differences between male and female gametes		
Features	Sperm (male gamete)	Secondary oocyte (female gamete)
Size	Very small, about $2\text{ }\mu\text{m}$	Very large, about $120\text{ }\mu\text{m}$
Length	More	Less
Motility	Highly motile	Immotile
Amount of cytoplasm	Absent/very little cytoplasm	Large amount of cytoplasm
Types	Two types: (a) X-bearing sperms ($22+X$) and (b) Y-bearing sperms ($22+Y$)	Only one type ($22+X$)



Q) Zona pellucida formed by?

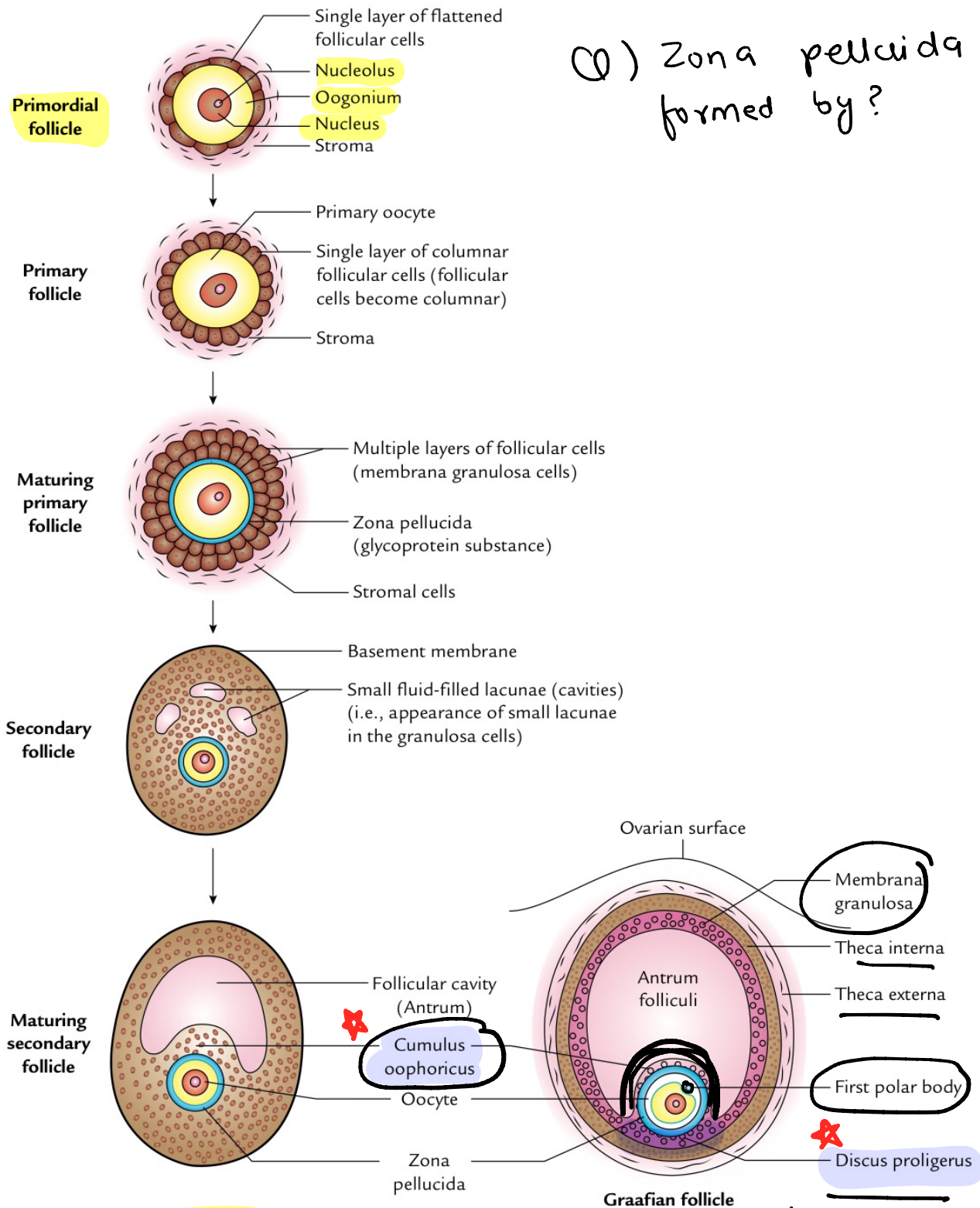


Fig. 3.8 Development of ovarian follicle.

Uterus

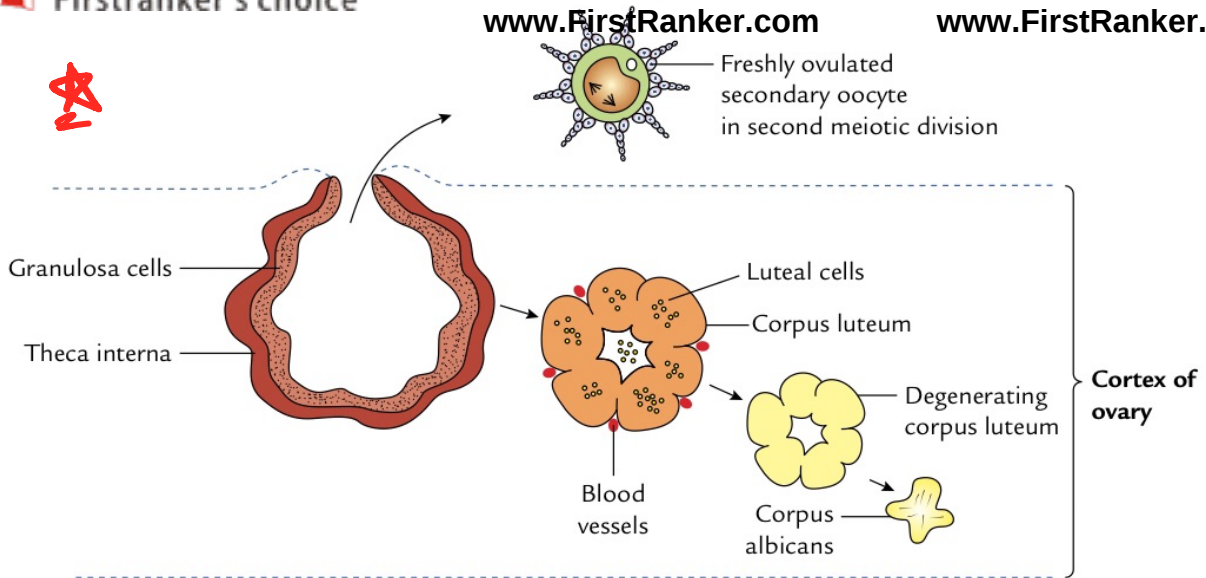
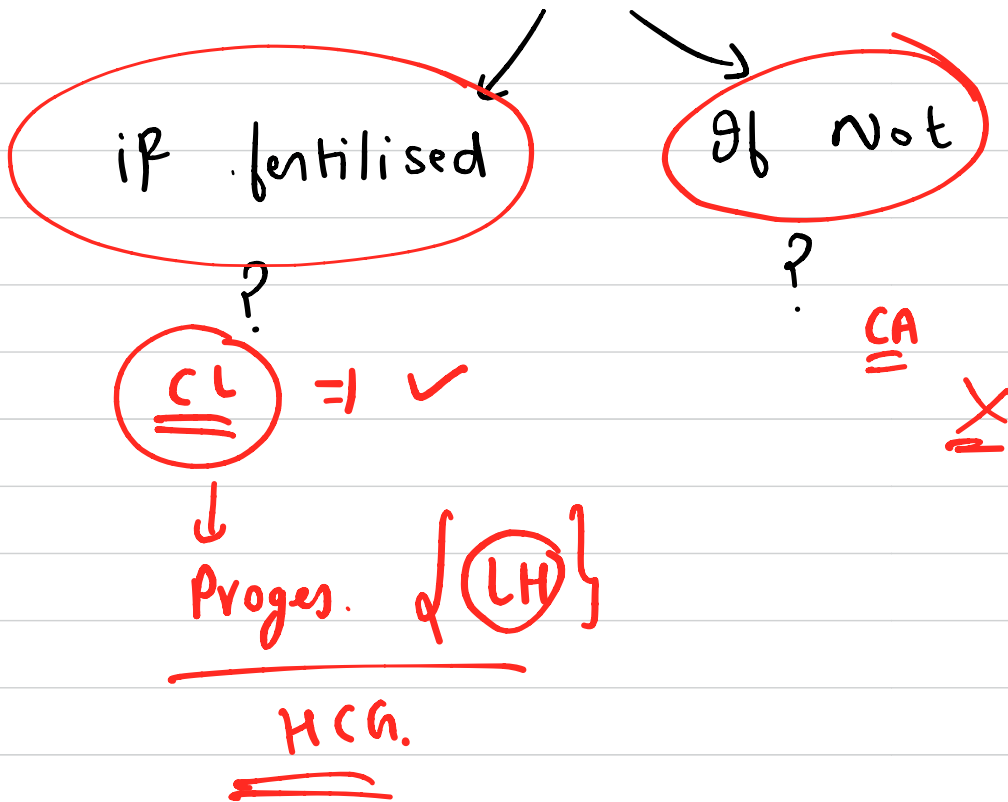


Fig. 3.9 Ovulation and formation of corpus luteum.



Q) Hormone secreted ?

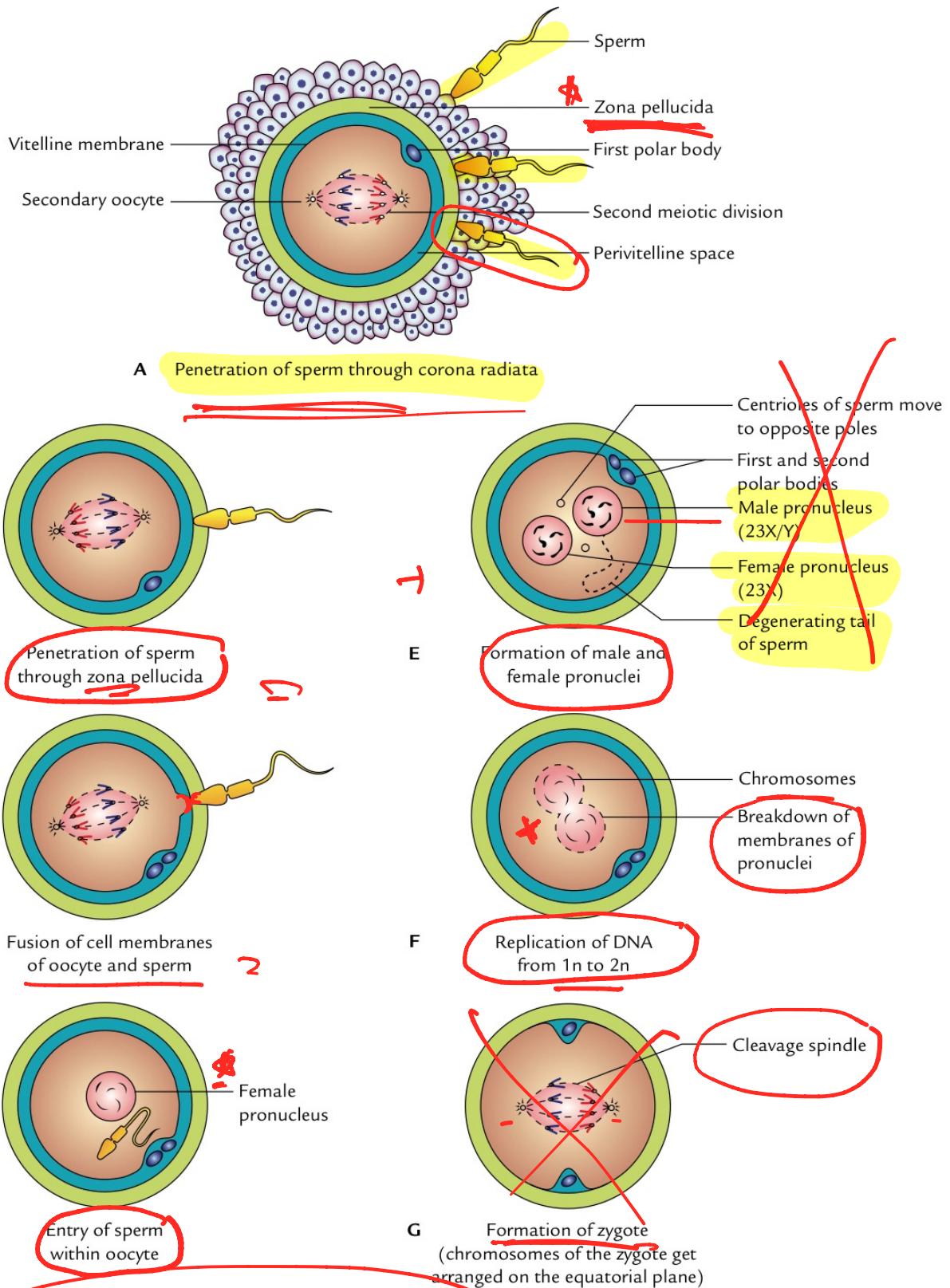


Fig. 4.2 Steps/phases of fertilization and formation of the zygote.

Q) Cleavage?

1) Zygote
↓
divides into 2 DC
↓
It further divide to form 4 DC
↓
" 16 DC
which is called Morula

(which is also called Mulberry).

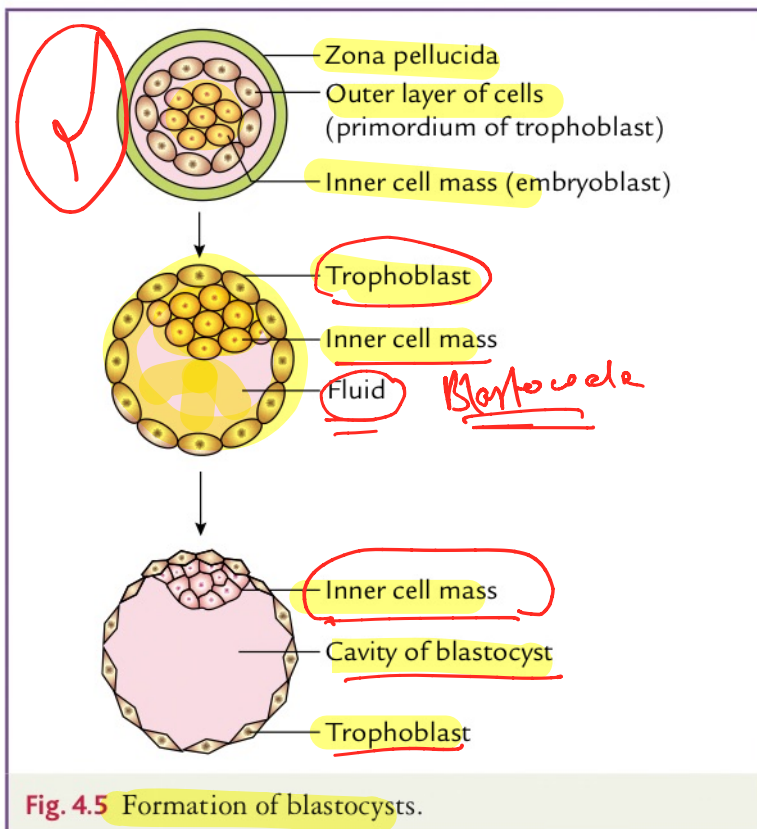
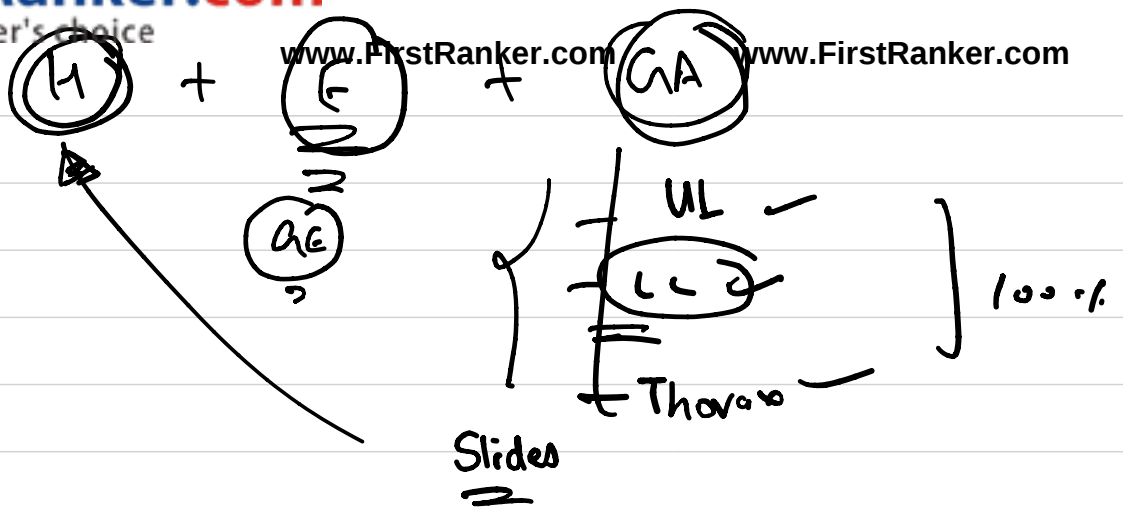


Fig. 4.5 Formation of blastocysts.

Q) fertilisation
ke Baad Zona
Pellucida Rahegi?

$\left. \begin{matrix} (E) \\ (H) \\ (GA) \end{matrix} \right\} \approx \frac{36}{2}$
 $\left[\begin{matrix} \sqrt{1} \\ \sqrt{2} \\ \sqrt{34} \end{matrix} \right]$
Newcom

$(H) \approx \frac{60+}{2}$
 $\underline{5-10}$ ↑



Biochemistry

Vitamin

(H)
2

oxidation

(B) → 3

21/22

Prot
Carb
lipid
Heme M.
CM
Imm.

Chemistry

Physiology

(CN) | (CVS)

Exercis
RS | CVS

CC

ECH

RS → Control

Sub. D.
Asph.

Hyp. → 5

(IS)
2

5/3

