Forensic Significance of Forensic Entomology / Insects.

1) It links crime with crime scene.
2) Geographical location. (Particular insects found at particular location).
3) Time of Death
   - i) life cycle of particular insects.
   - ii) Decomposition stages.

We can determine PMI. (Post-mortem interval).

a) Life cycle of fly:

Egg → Maggots (Larvae) → Pupae → Adult fly.

→ Fly lays ~~egg~~ about 500 eggs in lots of about 75-150 eggs at one time.
→ The egg hatch into maggots in about 24 hrs.
→ Larvae grow & pass through 3 stages:-
I instar (1 day) → II instar (2 days) → III instar (4 days).
→ Larvae Changes to Pupae in about a week.
→ Pupae Changes to adult in about 10 days leaving behind a puparia ~~(outer sheath of the larvae)~~
→ Fly lives for about 1 month.
→ Temp. & humidity plays imp roles in the life cycle of fly.

b) Decomposition Stages — It starts after death.

i) Fresh stage (Autolysis) — 0-4 days.
ii) Bloating " — (4-10 days)
iii) Active " — (10-20 days)
iv) Advanced " — (20-50 days)
v) Dry remains or skeletal stage (50-365 days)

i) Fresh Stage:

→ This stage is also known as Autolysis.
(Autolysis - is a process of internal decomposition of tissues of dead bodies due to activities of bacteria).

→ Cadavers appears fresh externally but decomposing internally due to activities of bacteria present in body before death.

→ Blow flies & flesh flies arrives first to lay eggs on dead bodies especially in opening area like mouth, Nose, Wound etc).

ii) Bloating Stage:

→ In this stage, body get swollen due to production of gases such as methane, CO_2, H_2S etc.

→ Gases build up the pressure & some cheesy fluids comes out from dead body.

→ Strong odour starts coming due to emitting of gases & fluid.

→ Maggots begin to hatch & feed.

→ Also some Cheese fly & fannils flies arrive during this stage.

iii) Active Stage:

→ Most body mass is lost.

→ Skin is broken, allowing gases to escape & the body collapses.

→ Maggots (Larvae) form large feeding mass.

→ At end of this stage, larvae leaves the body.

iv) Advanced stage

→ Soft tissues already decomposed.
→ Only bones, hair, cartilage, ligaments & sticky byproducts left in this stage.
→ Insects with chewing mouth part such as Beetles & certain types of flies are attracted
→ Strong odour start to fade.
→ No larval stage is found.

v) Skeletal stage:

→ Last stage of decomposition.
→ By products also dries up.
→ Skeleton & hairs left.
→ Bones lighten in colour.
→ No odour associated with this.

Post mortem Changes :- (After death, body undergoes some changes)

1) Algor mortis :- The cooling of dead body after death.

2) Rigor mortis → The stiffining or rigidity of the muscles. There is no ATP production

3) Livor mortis → The pooling of blood in the body due to gravity after the hearts stops. The colour of body becomes pale where the area is under pressure.