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**Section**         **A**  
**Paper**            **pathology**  
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Attempt all questions.Each question carry equal marks.

Q1.What are the circulating cells in acute inflammation?Also write the characteristics of Acute inflammation.

Q2. Write a note on infarction and its types and write a note on Mast cells.

Q3. Which are the cells having proliferative capacity?Explain them,also write about the characteristics of Benign tumor?

Q4. What is hypovolumic shock?Explain along with its conditions.

Q5.What is Edema?Explain its types also write about the classification of Thrombosis.

**Q1: What are the circulating cells in acute inflammation? Also write the characteristics of acute inflammation.**

**Ans:** Acute inflammation is a short-term response to tissue damage, usually occurring within minutes or hours. It has five main signs: pain, redness, impaired mobility (loss of function), swelling and fever.

The acute inflammatory process is initiated by resident immune cells already present in the relevant tissues, mainly resident macrophages, dendritic cells, tissue cells, Kupffer cells and mast cells.

When tissues are damaged by bacteria, wounds, toxins, heat or any other cause, an inflammatory reaction (inflammation) occurs. Damaged cells release chemicals including histamine, bradykinin and prostaglandins. These chemicals cause blood vessels to leak into the tissue, causing swelling.

**Characteristics of acute Inflammation:**

- ⇒ Rubor (redness)
  - ⇒ Tumor (swelling)
  - ⇒ Calor (heat)
  - ⇒ Dolor (pain)
  - ⇒ Loss of function.
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**Q2: Write a note on infarction and its types and note on mast cells?**

**Ans: Infarction:** Blood supply to tissues, organs or tissue areas is usually blocked by thrombi or embolisms, resulting in local tissue death. Infarction is tissue death (necrosis) caused by insufficient blood supply to the affected area. It may be caused by blocked arteries, rupture, mechanical compression, or vasoconstriction. [1] The resulting lesion is called an infarct(from the Latin infarct, "stuck").

**Types of Infarction:** Acute coronary syndrome is the name of three coronary artery diseases associated with sudden rupture of plaque in the coronary arteries: unstable angina, non-ST-segment elevation myocardial infarction or heart attack (NSTEMI) or ST-segment elevation type Myocardial infarction or heart disease (STEMI).

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**Q3: Which are the cells having proliferative capacity? Explain them, also write about the characteristics of Benign tumor?**

**Ans: Proliferative capacity of cells:** Cell proliferation is the process that leads to an increase in the number of cells, defined by the balance between cell division and cell loss through cell death or differentiation. Increased tumor cell proliferation.

The highest proliferation capacity (cell density) was observed in patients with multiple injuries. These data indicate that the severity and gender of the trauma affect the storage and proliferation capacity of bone marrow-derived MSCs.

**Characteristics of Benign Tumor:**

- ⇒ A benign tumor is a tumor that does not invade surrounding tissues or spread around the body.
  - ⇒ Benign tumors look like tissues with normal cells and grow slowly.
  - ⇒ Benign tumors will not invade the surrounding tissues or metastasize.
  - ⇒ Slow growth.
  - ⇒ Resemblance to tissue of origin (well differentiated)
  - ⇒ Circumscription.
  - ⇒ Lack of invasion.
  - ⇒ Absence of metastases.
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**Q4: What is Hypovolumic shock? Explain along with its condition**

**Ans: Hypovolumic Shock;** Hypovolemic shock is a fatal disease that can occur when you lose more than 20% (one-fifth) of your blood or body fluid supply. This severe fluid loss prevents the heart from pumping enough blood into your body. Hypovolemic shock may lead to organ failure.

Shock involves ineffective tissue perfusion and acute circulatory failure. Shock syndrome is a pathway involving multiple pathological

processes and can be divided into four stages: initial, compensatory, progressive and refractory (Urden, Stacy and Lough).

### **Condition of Hypovolumic shock;**

The main symptom of shock is low blood pressure. Other symptoms include rapid, shallow breathing; cold, clammy skin; rapid, weak pulse; dizziness, fainting, or weakness.

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### **Q5: What is Edema? Explain its types and also write about the classification of Thrombosis?**

**Ans: Edema:** "Edema" is the medical term for swelling. Swelling of body parts due to injury or inflammation. It affects small areas or the entire body. Medications, pregnancy, infections and many other medical problems can all cause edema. When fluid from small blood vessels penetrates into nearby tissues, edema occurs.

### **Types Of Edema;**

- 1. Peripheral edema:** This affects the ankles, legs, hands and arms of the feet.
- 2. Pulmonary edema:** too much fluid accumulates in the lungs, making breathing difficult.
- 3. Cerebral edema:** This happens in the brain.
- 4. Macular edema:** this is a serious complication of diabetic retinopathy.

### **Classification of Thrombosis;**

Thrombosis is a process that involves the formation of lectin and is divided into several different types according to the location of the thrombus. Venous thrombosis and arterial thrombosis are two broad categories, depending on whether the thrombus develops in the artery or vein.

Thrombosis is divided into two categories based on its location and the relative number of platelets and red blood cells (RBC). [4] The two main groups are:

-Arterial or white thrombus (mainly platelets).

-Venous thrombosis or red thrombosis (mainly red blood cells).

♥THE END♥

