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SECTION:B

I'd: 16119

2nd SEMESTER

DEPARTMENT:MLT

Date 24/ 6/ 2020

• Q No:1

@= developmental stages of erythropoieses?

Ans

In normal state the balance of production and destruction is maintained at remarkably constant rate.

Both exocrin and endocrine hormones makes important contribution to this dynamic well balance mechanism.

The earliest recognizable erthroid precursor seen in the boon marrow is large basophilic staining cell,15- 20 um.

Contain a single large well defined rounded nucleus, ribosomes, mitochondria and golgi apparatus .
= at the early precursor cell matures , its nucleus increases in size .as maturation goes on cell becomes smaller and more eosinophilic indicating haemoglobin .
=during intermediate stages of maturation, cytoplasm becomes polycromatic indicating mixture basophilic proteins and eosinophilic haemoglobin.
= further maturation, haemoglobin synthesis continue and cytoplasm becomes entirely eosinophilic .
= last stage of maturation, haemoglobin is abundant , few mitochondria and ribosomes are present.,nucleus is small dense and well circumscribed.

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● : Q No:2

^^ *Common causes of poor blood film?*

= drop of blood too large or too small .

= spreader slide pushed across the slide in a jerky manner.

= failure to keep the entire edge of the spreader slide against the slide while making the smear.

= failure to keep the spreader slide at a 30 degree angle with the slide.

Failure to push the spreader slide completely across the slide.

= irregular spread with ridges and long tail edge of spreader dirty or chipped dirty slide.

= holes in film slide contaminated with fat or grease.

= cellular degenerative changes: delay in fixing inadequate fixing times or methanol contaminated with water.

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• **Q No:3**

(*granulopoiesis*)

(*formation of neutrophils*)

1: ***myeloblast:***

An early precursor cell, diameter 15-20um , lower nuclear cytoplasmic ratio, No cytoplasmic granules.

2: large cell with a large nucleus and which demonstrates basophilic staining.

This stages exists for all granulocytes.

2. Promyelocytes: is the next stages of maturation, similar in size and appearance to myeloblast.

= during this stage primary granules are formed. This stage exists for all granulocyte.

= has numerous azurophilic primary granules in cytoplasm, that contain variety of enzymes.

3. Myelocyte

= secondary granules becomes apparent

= increased size and smaller primary granules.

= secondary granules have several bactericidal enzymes.

= nucleus becomes indented,

4. metamyelocytes: next stage in myelopoiesis is a cell having more granule.

5. Mature neutrophils: arise from stem cells in approx 10 days. Remain viable in systemic circulation for 8 to 12 hour.

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- **Q No:4**

(iron deficiency anemia)

Iron deficiency anemia is the most common type of anemia, and it occurs when your body doesn't have enough of the mineral iron. A condition in which blood lacks adequate healthy red blood cells. Red blood cells carry oxygen to the body tissues as the name implies, iron deficiency anemia is due to insufficient iron.

(causes)

= chronic blood loss

= uterine

= gastrointestinal, e.g peptic ulcer, esophageal varices, aspirin (or other non-steroidal anti- inflammatory drugs)

ingestion, partial gastrectomy, carcinoma of the stomach, colon or rectum, hookworm, angiodysplasia, colitis, piles, diverticulosis rarely, haematuria,

*haemoglobinuria, pulmonary
haemosiderosis, self- inflicted blood loss.
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• Q No:5

(classification of anemia)

On the basis of morphology and with regard of red cells induce we can classify the anemia in to following.

(microcytic hypochromic anemia)

In this type of anemia individual RBC are smaller in size than normal and contain a subnormal amount of haemoglobin. All absolute value (mcv,HCV, and mchc) are below normal.

- : iron deficiency anemia*
- : thalassemia*
- : sideroblastic*
- : anemia of chronic disorders*

##(macrocytic anemia)

In this type of anemia individual RBC are larger than normal, but the amount haemoglobin in each cell is usually below normal. Absolute values show increased mcv with usually normal MCH/MCHC.

(example)

- *Megaloblastic anemia*
- *Aplastic anemia*
- *Liver disease*
- *Myxoedema*
- *Haemolytic anemia*
- *Hypopituitarism*
- *Alcoholism*

(normocytic normochromic anemia)

In this type of anemia, although the haemoglobin concentrations in the blood is reduced, the individual RBC appears normal and absolute values are also within normal limits.

(example)

- *Acute blood loss*
- *Leukaemia*
- *Bone marrow infiltration*
- *Chronic renal failure*
- *Chronic infections (chronic disorders*

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