**Final Term Assignment (2020)**

**Course Title: Basic Physiology (DT– 2nd) Instructor: Dr. Irfan Ali Khan**

**Question Paper Time: 48 hours**

**Class Code. \_\_Bs dental 2nd sem\_\_\_\_ Name/Class Rollno: \_\_15932\_\_\_\_\_**

**Note:**

* **Attempt all questions from this section.**
* **Use Blue / Black Ink only. Do not use red color.**
* **Tick or encircle only one option in each given question.**

It’s an open book Conceptual Assignment paper. Time to Use your brain now.

1. **Briefly explain the process of hematopoiesis along with diagrammatic illustration. (Marks 10)**
2. **What are the factors that influence the respiratory rate, explain in detail. (Marks 10)**
3. **Enlist different layers of skin, write a detailed note on epidermis. (Marks 10)**
4. **Define lymphatic system, what are different components of lymphatic system? (Marks 10)**
5. **What is blood pressure? How will you check and record blood pressure of a patient? (Marks 10)**

**Q 1 Ans**

**Hematopoiesis is the process by which immature precursor cells develop into mature blood cells. The currently accepted theory on how this process works is called the monophyletic theory which simply means that a single type of stem cell gives rise to all the mature blood cells in the body.**

**The production of all types of blood cells including formation, development, and differentiation of blood cells. Prenatally, hematopoiesis occurs in the yolk sack, then in the liver, and lastly in the bone marrow.**

It occurs within the hematopoietic system, which includes organs and tissues such as the bone marrow, liver, and spleen. Simply, hematopoiesis is the process through which the body manufactures blood cells.  
the formation of blood cellular components – occurs during embryonic development and throughout adulthood to produce and replenish the blood system. ... Furthermore, hematopoietic stem cells (HSCs) can be used as a model system for understanding tissue stem cells and their role in ageing and oncogenesis.

**Q 2. Ans**

There are many factors that affect the respiratory rate: age, gender, size and weight, exercise, anxiety, pain, the effect of some medicines, smoking habits and excitement level are among them. A ‘normal’ respiratory rate for a man is about 14 to 18 breaths per minute and for a woman 16 to 20 breaths per minute, but it’s more important to know what is ‘normal’ for the individual, and to assess changes from that level.

deep and rapid breathing, which may suggest anxiety

shallow breathing, which can be brought on by some medicines

minimal chest movement, sometimes seen in asthma

the person struggling for breath, characteristic of long-term lung disease or the sudden onset of a new lung or heart problem

mouth breathing, which might indicate a blocked nose

pain on breathing, which could indicate a cracked rib, chest infection or a tumour in the lung

noises on breathing: normal breathing is practically soundless, so noisy breathing – whether it is wheeze, crackles or gasps – can indicate a problem

delayed breaths, where the time span between breaths varies: this can be a normal sign in older people, but could also indicate problems with the heart or brain.

**Q 3. Ans**

**The Seven Most Important Layers of Your Skin**

**Stratum Corneum. Composed of dead cells called keratinocytes, the stratum corneum is the outermost layer of skin, acting as a barrier to keep bacteria out and hold moisture in. ...**

**Epidermis. ...**

**Dermal-Epidermal Junction. ...**

**Dermis. ...**

**Hypodermis. ...**

**Muscle. ...**

**Bone.**

**Epidermis: The upper or outer layer of the two main layers of cells that make up the skin. The epidermis is mostly made up of flat, scale-like cells called squamous cells. Under the squamous cells are round cells called basal cells. ... Sweat and sebum reach the skin's surface through tiny openings called pores.**

**Q4 Ans**

**The lymphatic system, or lymphoid system, is an organ system in vertebrates that is part of the circulatory system and the immune system. It is made up of a large network of lymphatic vessels, lymphatic or lymphoid organs, and lymphoid tissues. The vessels carry a clear fluid called lymph towards the heart.**

**Different component of lymphatic system.**

**The lymphatic system consists of the lymphatic vessels (capillary plexus, precollecting and collecting lymph vessels including lymphatic ampule and diverticulum and lymphatic trunks and ducts), organs (lymph nodes, spleen, thymus and tonsils), tissue (Peyer's patch), etc**

**Q.5 Ans**

**Blood pressure is the pressure of circulating blood on the walls of blood vessels. Most of this pressure is due to work done by the heart by pumping blood through the circulatory system. Used without further specification, "blood pressure" usually refers to the pressure in large arteries of the systemic circulation.**

**To begin blood pressure measurement, use a properly sized blood pressure cuff. The length of the cuff's bladder should be at least equal to 80% of the circumference of the upper arm.**

**Wrap the cuff around the upper arm with the cuff's lower edge one inch above the antecubital fossa.**

**Lightly press the stethoscope's bell over the brachial artery just below the cuff's edge. Some health care workers have difficulty using the bell in the antecubital fossa, so we suggest using the bell or the diaphragm to measure the blood pressure.**

**Rapidly inflate the cuff to 180mmHg. Release air from the cuff at a moderate rate (3mm/sec).**

**Listen with the stethoscope and simultaneously observe the sphygmomanometer. The first knocking sound (Korotkoff) is the subject's systolic pressure. When the knocking sound disappears, that is the diastolic pressure (such as 120/80).**

**Record the pressure in both arms and note the difference; also record the subject's position (supine), which arm was used, and the cuff size (small, standard or large adult cuff).**

**If the subject's pressure is elevated, measure blood pressure two additional times, waiting a few minutes between measurements.**

**A BLOOD PRESSURE OF 180/120mmHg OR MORE REQUIRES IMMEDIATE ATTENTION!**

**Stay home, stay Safe**