Name ; EKEH CHERECHI

NO.; 18/MHS07/015

ANA 202

1. **Describe the heart and its functions**; The heart is a muscular organ , which pumps blood through the blood vessels of the circulatory system and it is about the same size as a fist . Blood provides the body with oxygen and nutrients, as well as assisting in the removal of metabolic wastes. In humans, the heart is located between the lungs, in the middle compartment of the chest. In humans, the heart is divided into four chambers: upper left and right atria and lower left and right ventricles. Commonly the right atrium and ventricle are referred together as the right heart and their left counterparts as the left heart.In a healthy heart blood flows one way through the heart due to heart valves, which prevent backflow.The heart is enclosed in a protective sac, the pericardium, which also contains a small amount of fluid. The wall of the heart is made up of three layers: epicardium, myocardium, and endocardium.The heart pumps blood with a rhythm determined by a group of pacemaking cells in the sinoatrial node. These generate a current that causes contraction of the heart, traveling through the atrioventricular node and along the conduction system of the heart. The heart receives blood low in oxygen from the systemic circulation, which enters the right atrium from the superior and inferior venae cavae and passes to the right ventricle. From here it is pumped into the pulmonary circulation, through the lungs where it receives oxygen and gives off carbon dioxide. Oxygenated blood then returns to the left atrium, passes through the left ventricle and is pumped out through the aorta to the systemic circulation−where the oxygen is used and metabolized to carbon dioxide.The heart beats at a resting rate close to 72 beats per minute.
2. **Write on five (5) different congenital anomalies of the heart**

**Aortic valve stenosis;** Aortic valve stenosis is a serious type of congenital heart defect.In aortic valve stenosis, the aortic valve that controls the flow of blood out of the main pumping chamber of the heart (the left ventricle) to the body's main artery (the aorta) is narrowed. This affects the flow of oxygen-rich blood away from the heart, towards the rest of the body, and may result in the left ventricle muscle thickening because the pump has to work harder.

**Coarctation of the aorta;** Coarctation of the aorta (CoA) is where the main artery (the aorta) has a narrowing, which means that less blood can flow through it. CoA can occur by itself or in combination with other types of heart defects – such as a ventricular septal defect or a type of defect known as a patent ductus arteriosus.The narrowing can be severe and will often require treatment shortly after birth.

**Ebstein's anomaly**; Ebstein's anomaly is a rare form of congenital heart disease, where the valve on the right side of the heart (the tricuspid valve), which separates the right atrium and right ventricle, doesn't develop properly. This means blood can flow the wrong way within the heart, and the right ventricle may be smaller and less effective than normal. Ebstein's anomaly can occur on its own, but it often occurs with an atrial septal defect.

**Patent ductus arteriosus;** As a baby develops in the womb, a blood vessel called the ductus arteriosus connects the pulmonary artery directly to the aorta. The ductus arteriosus diverts blood away from the lung (which isn't working normally before birth) to the aorta. A patent ductus arteriosus is where this connection doesn't close after birth as it's supposed to. This means that extra blood is pumped into the lungs, forcing the heart and lungs to work harder.

**Pulmonary valve stenosis;** Pulmonary valve stenosis is a defect where the pulmonary valve, which controls the flow of blood out of the right heart pumping chamber (the right ventricle) to the lungs, is narrower than normal. This means the right heart pump has to work harder to push blood through the narrowed valve to get to the lungs.