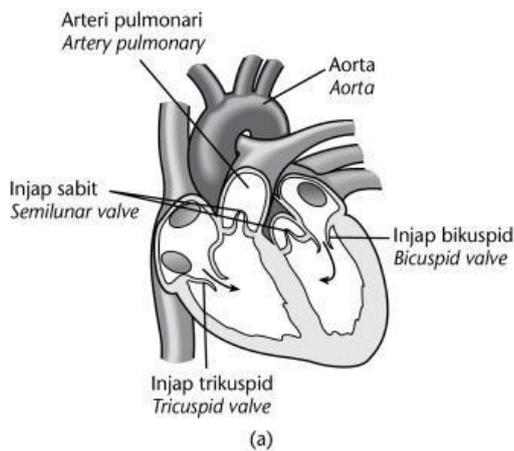


Kaji rajah yang diberi. Kenal pasti keadaan denyutan jantung. Kemudian, pilih jawapan yang betul untuk melengkapkan peta alir tentang keadaan denyutan jantung. **TP2**

Study the given diagrams. Identify the condition of the heartbeat. Then, choose the correct answers to complete the flow map about the sequence of the conditions of the heartbeat.

Diastol/Diastole
Sistol/Sistole


(a)



Injap sabit pada arteri pulmonari dan aorta (terbuka, tertutup).

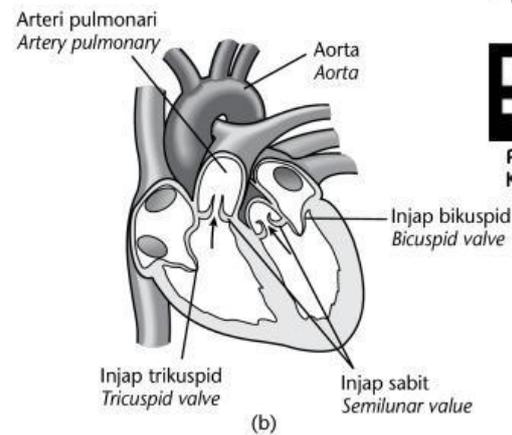
The semilunar valves at the pulmonary artery and aorta are (opened, closed).

Pada masa yang sama, injap trikuspid dan bikuspid (terbuka, tertutup). Atrium dan ventrikel (mengendur, mengecut). Bunyi ('lub', 'dub') terhasil.

At the same time, the tricuspid and bicuspid valves are (opened, closed). Atria and ventricles (relax, contract). A ('lub', 'dub') sound is produced.

Darah mengalir masuk dari (atrium, ventrikel) ke dalam (ventrikel, salur darah). Bacaan tekanan darah yang mengalir dan mengisi jantung dipanggil bacaan tekanan (diastolik, sistolik).

The blood flows from the (atria, ventricles) into the (ventricles, blood vessels). The reading of blood pressure where the blood flows and fills the heart is called the (diastolic, systolic) pressure reading.



(b)



Injap sabit pada arteri pulmonari dan aorta (terbuka, tertutup).

The semilunar valves at the pulmonary artery and aorta are (opened, closed).

Pada masa yang sama, injap trikuspid dan bikuspid (terbuka, tertutup). Atrium dan ventrikel (mengendur, mengecut). Bunyi ('lub', 'dub') terhasil.

At the same time, the tricuspid and bicuspid valves are (opened, closed). Atria and ventricles (relax, contract). A ('lub', 'dub') sound is produced.

Darah ditolak masuk dari (atrium, ventrikel) ke dalam (ventrikel, salur darah). Bacaan tekanan darah yang mengalir keluar dari jantung dipanggil bacaan tekanan (diastolik, sistolik).

The blood flows from the (atria, ventricles) into the (ventricles, blood vessels). The reading of blood pressure where the blood flows out of the heart is called the (diastolic, systolic) pressure reading.



Video



Praktis Kendiri

AKTIVITI HANDS-ON

1. Pembelajaran Berasaskan Projek 2: Kepentingan menjaga kesihatan jantung (rujuk silang m.s. 169)
Project-Based Learning 2: The importance of maintaining a healthy heart (cross reference p. 170)
2. Eksperimen Wajib 4: Faktor yang mempengaruhi kadar denyutan nadi (rujuk silang m.s. 181 – 182)
Compulsory Experiment 4: Factors affecting the pulse rate (cross-reference pp. 181 – 182)

- 1 Lengkapkan ruang di bawah tentang kandungan darah manusia. **TP2**
Complete the spaces below about the constituents of human blood.

| | | |
|-------------------------------------|-----------------------------------|---------------------------|
| Sel darah putih White blood cell | Sel darah merah Red blood cell | Emperan Centrifugation |
| Plasma Plasma | Platlet Platelet | Mengasingkan Separate |



Video

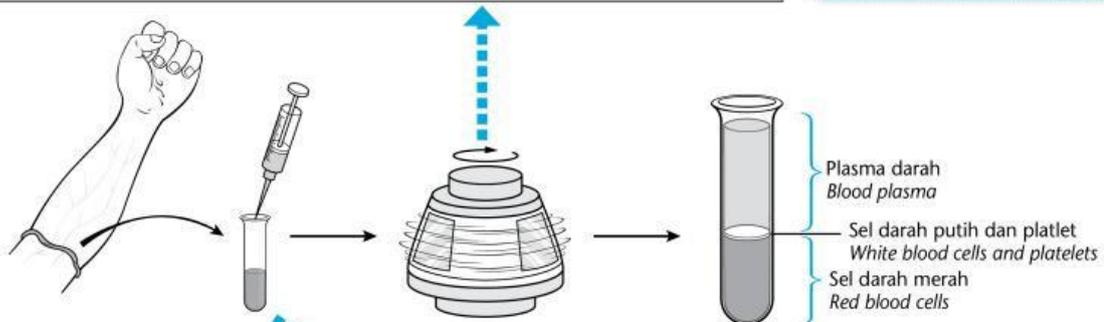


Praktis
Kendiri

Galeri Info

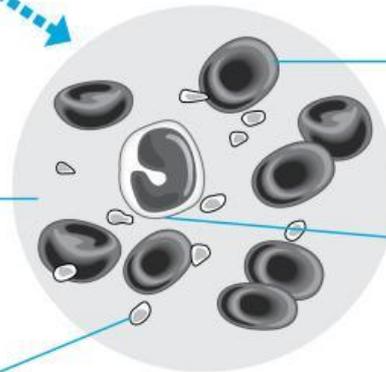
Terdapat kira-kira 5 juta sel darah merah, 10 000 sel darah putih dan 250 000 platlet dalam setitik darah.
There are approximately 5 millions red blood cells, 10 000 white blood cells and 250 000 platelets in a single drop of blood.

- (a) Kaedah _____/_____ method
Campuran darah diputarakan dengan kelajuan yang tinggi dalam alat emperan untuk _____ komponen darah
The blood mixture is spun at a high speed in the centrifugal device to _____ blood components



- (b) _____
• Bahagian cecair dengan kira-kira 90% air dan 10% bahan terlarut
Liquid part with about 90% water and 10% dissolved substances

- (e) _____
• Membekukan darah
Clots the blood



- (c) _____
• Mengangkut oksigen/Transports oxygen

- (d) _____
• Membunuh patogen
Kills pathogens

- 2 Tandakan (✓) kandungan lain darah./Tick (✓) other constituents of the blood. **TP1**

| | | | |
|--|---|--|---|
| <input type="checkbox"/> Hormon Hormone | <input type="checkbox"/> Nutrien Nutrient | <input type="checkbox"/> Kanji Starch | <input type="checkbox"/> Gas Gas |
| <input type="checkbox"/> Hempedu Bile | <input type="checkbox"/> Antibodi Antibody | <input type="checkbox"/> Enzim Enzyme | <input type="checkbox"/> Bahan kumuh Excretory product |

- 3 Siapakah pakar perubatan yang mengkaji komponen, kandungan dan penyakit yang berkaitan dengan darah manusia? Bulatkan jawapan yang betul./Who are the specialists that study the components, contents and diseases associated with the human blood? Circle the correct answer. **TP1**

Ahli farmasi
Pharmacists

Ahli mikrobiologi
Microbiologists

Ahli hematologi
Haematologists

Ahli fisiologi
Physiologists

Jawab soalan-soalan tentang darah manusia.
Answer the questions about the human blood.

1 Apakah kumpulan darah manusia? **TP1**

What are the human blood groups?

2 Apakah jenis antigen (bahan asing atau protein) dalam sel darah merah? **TP1**

What are the types of antigens (foreign substances or proteins) in red blood cells?

3 Nyatakan jenis antigen yang terdapat pada individu dengan kumpulan darah yang berikut. **TP1**

State the type of antigen found in individuals with the following blood group.

(a) Kumpulan darah A/Blood group A : _____

(b) Kumpulan darah B/Blood group B : _____

(c) Kumpulan darah AB/Blood group AB : _____

(d) Kumpulan darah O/Blood group O : _____

4 Tandakan (✓) jenis antibodi yang mungkin hadir dalam plasma darah. **TP1**

Mark (✓) type of antibodies that may be present in the blood.

Antibodi Anti-A
Anti-A antibody

Antibodi Anti-B
Anti-B antibody

Antibodi Anti-AB
Anti-AB antibody

Antibodi Anti-O
Anti-O antibody

5 Nyatakan jenis antibodi yang terdapat pada individu dengan kumpulan darah yang berikut. **TP1**

State the type of antibody found in individuals with the following blood group.

Antibodi Anti-A/*Anti-A antibody*

Antibodi Anti-B/*Anti-B antibody*

Tiada/*None*

(a) Kumpulan darah A/Blood group A : _____

(b) Kumpulan darah B/Blood group B : _____

(c) Kumpulan darah AB/Blood group AB : _____

(d) Kumpulan darah O/Blood group O : _____

6 Antibodi Anti-A akan menyerang antigen A dan antibodi Anti-B akan menyerang antigen B.
Anti-A antibodies will attack antigens A and Anti-B antibodies will attack antigens B.

Berdasarkan pernyataan di atas, kenal pasti jenis kumpulan darah dan antibodi yang hadir dalam plasma darah. **TP2**

Based on the statement above, identify the type of blood groups and antibody present in blood plasma.

Kumpulan darah _____ Antibodi Anti-_____ Penggumpalan darah
Blood group _____ Anti-_____ antibody (tidak serasi)
Agglutination (not compatible)



**Praktis
Kendiri**