

類 科：輪機技術

科 目：輔機

考試時間：2 小時

座號：_____

※注意：(一)可以使用電子計算器。

(二)不必抄題，作答時請將試題題號及答案依照順序寫在試卷上，於本試題上作答者，不予計分。

- 一、傳統式蒸氣產生系統之節熱器排煙出口溫度愈低，則其廢熱回收率愈高，但排煙之排出溫度亦不得過低，請詳述其原因。(20 分)
- 二、請詳述四種液壓換向閥之控制裝置的工作原理與優缺點。(20 分)
- 三、請詳述何謂起動引注(Priming)？請列出兩種自動引注(Self-priming)方式並說明其工作原理。(20 分)
- 四、有一液壓馬達，其轉矩效率及容積效率分別為 80%及 90%，且馬達每轉之流體量為 $50 \text{ cm}^3/\text{rev}$ ，轉速為 1500 rpm。若本馬達欲得到 12 kg-m 之轉矩，則所需之流體流量（以 cm^3/min 表示之）及壓力（以 kg/cm^2 表示之）各為多少？請計算之。(20 分)
- 五、請將下列英文譯成中文。(20 分)

On the compression stroke for a theoretical single cylinder compressor, the pressure rises to slightly above discharge pressure. A spring-loaded non-return discharge valve opens and the compressed air passes through at approximately constant pressure. At the end of the stroke the differential pressure across the valve, aided by the valve spring, closes the discharge valve, trapping a small amount of high pressure air in the clearance space between the piston and the cylinder head. On the suction stroke the air in the clearance space expands, its pressure dropping until such time as a spring-loaded suction valve re-seats and another compression stroke begins.