

系所組別： 工業設計學系乙組

考試科目： 人體工學

考試日期：0225，節次：2

一、解釋名辭(36%；請詳加解釋，若僅翻譯則每題給一分；解釋正確，但不夠詳盡，給二分；解釋正確，且夠詳盡，給三分；解釋正確，且夠詳盡，並甚為精彩或有獨到見解者，給四分。)

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|--------------------------------|----------------------|----------------|
| 1. Five-point Grip Pen | 2. Spatial Frequency | 3. Reliability |
| 4. Image-based Virtual Reality | 5. Blind Positioning | 6. Arduino |
| 7. HCII conference | 8. Depth Perception | 9. Pragmatics |

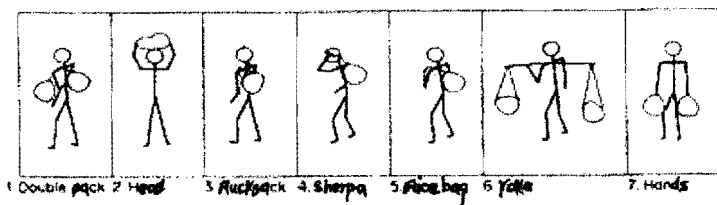
二、1. 何謂心理工作負荷(Mental Workload)？(5%)

2. 心理工作負荷量測(Measurement)方式有哪些？試就這些量測方式詳加說明。(10%)

三、假設現今要設計年輕女性專用牙刷，

1. 請問您將考慮那些設計原則？(6%)
2. 試以 Sketch 方式繪出您的設計，並說明其優劣點？(8%)
3. 請問你/妳將如何針對您的設計進行評估實驗？(6%)
4. 請詳加說明這個評估實驗之自變項(Independent Variables)、應變項(Dependent Variables)，及如何進行變項控制。(9%)

四、試評論下圖之不同搬運方式。(10%)



五、假設某男校同學身高成常態分配(Normal Distribution)，已知該校30 %ile身高為160cm，第60百分位值同學身高為180公分，試求 (1)該校同學身高之平均值，(2)該校同學10th percentile身高值。(10%)

標準常態分配機率表 $P(-\infty < Z < Z_0)$

Z ₀	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
.0	.500	.504	.508	.512	.516	.520	.524	.528	.532	.536
.1	.540	.544	.548	.552	.556	.560	.564	.567	.571	.575
.2	.579	.583	.587	.591	.595	.599	.603	.606	.610	.614
.3	.618	.622	.626	.629	.633	.637	.641	.644	.648	.652
.4	.655	.659	.663	.666	.670	.674	.677	.681	.684	.688
.5	.691	.695	.698	.702	.705	.709	.712	.716	.719	.722
.6	.726	.729	.732	.736	.739	.742	.745	.749	.752	.755
.7	.758	.761	.764	.767	.770	.773	.776	.779	.782	.785
.8	.788	.791	.794	.797	.800	.802	.805	.808	.811	.813
.9	.816	.819	.821	.824	.826	.829	.831	.834	.836	.839
1.0	.841	.844	.846	.849	.851	.853	.855	.858	.860	.862
1.1	.864	.867	.869	.871	.873	.875	.877	.879	.881	.883
1.2	.885	.887	.889	.891	.893	.894	.896	.898	.900	.901
1.3	.903	.905	.907	.908	.910	.911	.913	.915	.916	.918
1.4	.919	.921	.922	.924	.925	.926	.928	.929	.931	.932
1.5	.933	.934	.936	.937	.938	.939	.941	.942	.943	.944
1.6	.945	.946	.947	.948	.950	.951	.952	.953	.954	.954
1.7	.955	.956	.957	.958	.959	.960	.961	.962	.962	.963
1.8	.964	.965	.966	.966	.967	.968	.969	.969	.970	.971
1.9	.971	.972	.973	.973	.974	.974	.975	.976	.976	.977
2.0	.977	.978	.978	.979	.979	.980	.980	.981	.981	.982
2.1	.982	.983	.983	.983	.984	.984	.985	.985	.985	.986
2.2	.986	.986	.987	.987	.987	.988	.988	.988	.989	.989
2.3	.989	.990	.990	.990	.990	.991	.991	.991	.991	.992
2.4	.992	.992	.992	.992	.993	.993	.993	.993	.993	.994