Program: BE Mechanical Engineering

Curriculum Scheme: Revised 2012

Examination: Fourth Year Semester VII

Course Code: MEC703 and Course Name: MUS

Time: 1hour Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

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| Q1.  | Capacity of a rotary pump is defined as \_\_\_\_\_\_\_\_\_ |
| Option A: | Total liquid displaced |
| Option B: | Overall performance of pump |
| Option C: | Maximum fluid flow |
| Option D:  | Minimum fluid flow |
|  |  |
| Q2. | for centrifugal pump impeller, the maximum value of the vane exit angle is |
| Option A: | 10o to 15o |
| Option B: | 15o to 20o |
| Option C: | 20o to 25o |
| Option D: | 25o to 30o |
|  |  |
| Q3. | Find the work per kg of air in a centrifugal compressor running at 10000rpm, blade tip diameter 50 cm & slip factor 0.85. |
| Option A: | 58.25 kW |
| Option B: | 60.45 kW |
| Option C: | 100 kW |
| Option D: | 150.23 KW |
|  |  |
| Q4. | In a centrifugal pump, the regulating valve is provided on the |
| Option A: | Casing |
| Option B: | Delivery pipe |
| Option C: | Suction pipe |
| Option D: | Impeller |
|  |  |
| Q5. | In an axial flow compressor, the ratio of pressure in the rotor blades to the pressure rise in the compressor in one stage is known as......... |
| Option A: | Work factor |
| Option B: | Slip factor |
| Option C: | Degree of reaction |
| Option D:  | Pressure coefficient |
|  |  |
| Q6. | Indicator diagram of a reciprocating pump is a graph between...... |
| Option A: | Floor vs swept volume |
| Option B: | Pressure in cylinder vs swept volume |
| Option C: | Flow vs speed |
| Option D:  | Pressure vs speed |
|  |  |
| Q7.  | Compressor mostly used for supercharging of IC engine is |
| Option A: | Radial flow compressor |
| Option B: | Axial flow compressor |
| Option C: | Roots blower |
| Option D:  | Reciprocating Compressor |
|  |  |
| Q8.  | Maximum work is done in compressing air when the compression is...... |
| Option A: | Constant volume |
| Option B: | Isothermal |
| Option C: | Adiabatic |
| Option D:  | Polytropic |
|  |  |
| Q9. | As the specific speed increases, the slope of HQ curve \_\_\_\_\_\_\_ |
| Option A: | Decreases |
| Option B: | Increases |
| Option C: | Independent |
| Option D:  | Remains the same |
|  |  |
| Q10.  | A compressor at high altitude will draw |
| Option A: | more power |
| Option B: | less power |
| Option C: | same power  |
| Option D:  | Minimum power |
|  |  |
| Q11.  | Volumetric efficiency of air compressors is of the order of......... |
| Option A: | 20 to 30% |
| Option B: | 40 to 50% |
| Option C: | 60 to 70% |
| Option D:  | 70 to 90% |
|  |  |
| Q12. | In a centrifugal compressor, an increase in speed at a given pressure ratio causes....... |
| Option A: | Increase in flow |
| Option B: | Decrease in flow |
| Option C: | Increase in efficiency |
| Option D: | Increase in flow and decrease in efficiency |
|  |  |
| Q13. | The inlet passage of water entry is controlled by…… |
| Option A: | head race  |
| Option B: | gate |
| Option C: | tail race |
| Option D:  | pump |
|  |  |
| Q14.  | At higher pressures, the impeller is connected in \_\_\_\_\_\_\_ |
| Option A: | Series |
| Option B: | Parallel |
| Option C: | Equilibrium |
| Option D:  | Series and parallel |
|  |  |
| Q15. | The ratio of manometric head to the work head is called \_\_\_\_\_\_\_ |
| Option A: | Manometric head |
| Option B: | Euler head |
| Option C: | Pressure head |
| Option D:  | Shaft head |
|  |  |
| Q16.  | The ratio of work-done per cycle to the stroke volume of the compressor is known as....... |
| Option A: | Compressor capacity |
| Option B: | Volumetric efficiency |
| Option C: | Compressor efficiency |
| Option D:  | Mean effective pressure |
|  |  |
| Q17. | Rotary compressor are used for delivering |
| Option A: | Small quantities of air at high pressure |
| Option B: | Large quantities of air at high pressure |
| Option C: | Small quantities of air at low pressure |
| Option D: | Large quantities of air at low pressure |
|  |  |
| Q18. | In a reciprocating pump, with the change in discharge pressure, \_\_\_\_\_\_\_\_ |
| Option A: | The Volume delivered increases |
| Option B: | The volume delivered decreases |
| Option C: | Volume delivered remains the same |
| Option D:  | Volume delivered is independent |
|  |  |
| Q19.  | Capacity control of compressors can be done by |
| Option A: | Increasing temperature |
| Option B: | Increasing pressure |
| Option C: | Variable speed drive control |
| Option D:  | Decreasing temperature |
|  |  |
| Q20. | Volumetric efficiency of a compressor without clearance volume....... |
| Option A: | Increases with increase in compression ratio |
| Option B: | Decreases with increase in compression ratio |
| Option C: | In not dependent upon compression ratio |
| Option D: | May increase or decrease depending on compressor capacity |
|  |  |
| Q21. | The value of air sucked by the compressor during its suction stroke is called….. |
| Option A: | Free air delivery |
| Option B: | Compressor capacity |
| Option C: | swept volume  |
| Option D:  | clearance volume |
|  |  |
| Q22.  | When air is to be compressed at a high pressure, then it is advantageous to use |
| Option A: | Single stage compression |
| Option B: | Multi stage compression without intercooling |
| Option C: | Multi stage compression with intercooling |
| Option D:  | Multistage compression  |
|  |  |
| Q23. | Pump resistance must be minimum to  |
| Option A: | save energy  |
| Option B: | increase energy |
| Option C: | Increase temperature |
| Option D:  | decrease pressure |
|  |  |
| Q24.  | The pressure of air at the beginning of the compression stroke is…..atmospheric pressure |
| Option A: | Equal to  |
| Option B: | Less than  |
| Option C: | More than |
| Option D:  | Slightly greater than |
|  |  |
| Q25. | Overall efficiency of a centrifugal pump is the ratio of |
| Option A: | Energy available at the impeller to the energy supplied to the pump by the prime mover |
| Option B: | Actual work done by the pump to the energy supplied to the pump by the prime mover |
| Option C: | Energy supplied to the pump to the energy available at the impeller |
| Option D:  | Manometric head to the energy supplied by the impeller per KN of water |