University of Mumbai

Examination 2020 under cluster 4 (PCE)

Program: BE Mechanical Engineering
Curriculum Scheme: Rev 2012
Examination: Third Year Semester VI
Course Code: MEC604 and Course Name: Thermal and Fluid Power Engineering
Time: 1 hour Max. Marks: 50

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

Q1.	In fire tube boilers, pressure is limited to
Option A:	20 bar
Option B:	50 bar
Option C:	100 bar
Option D:	200 bar
Q2.	Fire tube boilers are those in which
Option A:	flue gases pass through tubes and water around it
Option B:	water passes through the tubes and flue gases around it
Option C:	Both passes through the tubes
Option D:	Both are surrounds the tube
Q3.	The fusible plug in boiler is located
Option A:	At the chimney
Option B:	Over the combustion chamber
Option C:	In the fire tubes
Option D:	Above steam dome
Q4.	The function of a _____is to remove the entrained water particles from the steam conveyed to turbine.
Option A:	Steam separator
Option B:	Economizer
Option C:	Super heater
Option D:	Injector
Q5.	The economizer is used in boilers to
Option A:	increase thermal efficiency of boiler
Option B:	decrease thermal efficiency of boiler
Option C:	for safety of boiler
Option D:	increase flue gas temperature
Q6.	The parson's reaction turbine has.....
Option A:	Identical moving and fixed blades
Option B:	Only moving blades
Option C:	Only fixed blades
Option D:	Fixed and moving blades of different shape
Q7.	When the degree of reaction is zero in Reaction turbine then there is.....
Option A:	No heat drop in the moving blades
Option B:	No heat drop in the fixed blades

Option C:	Maximum heat drop in the moving blades
Option D:	Maximum heat drop in the fixed blades
Q8.	In velocity compounding, steam is passed through
Option A:	moving blades-fixed nozzles- fixed blades-moving blades
Option B:	fixed nozzle-moving blades-fixed nozzles-moving blades
Option C:	fixed nozzle-moving blades-fixed blades-moving blades
Option D:	fixed blades-moving blades-fixed nozzles- moving blades
Q9.	For a Parson's reaction turbine, if $\alpha 1$ and $\alpha 2$ are fixed blade angles at inlet and exit respectively and $\beta 1$ and $\beta 2$ are the moving blade angles at entrance and exit respectively, then
Option A:	$\alpha 1 = \beta 2$ and $\beta 1 = \alpha 2$
Option B:	$\alpha 1 = \alpha 2$ and $\beta 1 = \beta 2$
Option C:	$\alpha 1 < \beta 1$ and $\alpha 2 > \beta 2$
Option D:	$\alpha 1 = \beta 1$ and $\alpha 2 = \beta 2$
Q10.	A turbine is called reaction turbine if at the inlet of the turbine the total energy is
Option A:	kinetic energy only
Option B:	kinetic energy and pressure energy
Option C:	pressure energy only
Option D:	heat energy
Q11.	Francis turbine is
Option A:	an impulse turbine
Option B:	a radial flow impulse turbine
Option C:	an axial flow turbine
Option D:	a radial flow reaction turbine
Q12.	If the head on the turbine is more than 300 m, the type of turbine used should be
Option A:	Francis
Option B:	Kaplan
Option C:	Pelton
Option D:	Propeller
Q13.	In a reaction turbine, function of a draft tube is to
Option A:	provide safety to turbine
Option B:	prevent air from entering
Option C:	reconvert K. E. to flow energy
Option D:	increase the rate of flow
Q14.	If a jet of water is discharging under a head of 10 m and coefficient of velocity is 0.90, the actual velocity of jet is, ($g = 10\ m/s^2$)
Option A:	12.73 m/s
Option B:	10.7 m/s
Option C:	15 m/s
Option D:	20 m/s

Q15.	Pelton wheel is used in those place where
Option A:	high head and low discharge are available
Option B:	low head and high discharge are available
Option C:	high head and high discharge are available
Option D:	for any head and discharge
Q16.	The purpose of governing in steam turbines is to
Option A:	maintain Constant speed of rotation
Option B:	Reduce the effective heat drop
Option C:	Reheat the steam and improve its quality
Option D:	Completely balance against end thrust
Q17.	Which type of turbine should be selected for operating head from 50 to 400 m
Option A:	Kaplan turbine
Option B:	Francis turbine
Option C:	pelton turbine
Option D:	impulse turbine
Q18.	In gas turbine compressor is coupled with
Option A:	combustion chamber
Option B:	Heat exchanger
Option C:	Turbine
Option D:	combustion chamber and heat exchanger both
Q19.	Which component of gas turbine power plant is main cause of its low efficiency
Option A:	Gas turbine
Option B:	combustion chamber
Option C:	Compressor
Option D:	starting motor
Q20.	Which of these is not a part of a Gas Turbine Plant?
Option A:	Compressor
Option B:	Gas turbine
Option C:	Combuster
Option D:	Boiler
Q21.	There is a continuous air flow in_____.
Option A:	turbo jet
Option B:	flying bomb
Option C:	liquid propellent
Option D:	solid propellent
Q22.	Air stream jet engines are termed as_____.
Option A:	turbo-prop only
Option B:	turbo-jet only
Option C:	pulse-jet only

Option D:	turbo-jet, turbo-prop & ram-jet
Q23.	In turbo-prop system, the expansion of gases takes place partly in turbine_____.
Option A:	30%
Option B:	60%
Option C:	80%
Option D:	20%
Q24.	For a jet propulsion unit, ideally the compressor work and turbine work are_____.
Option A:	not related to each other
Option B:	Unpredictable
Option C:	not equal
Option D:	Equal
Q25.	Jet propulsion takes oxygen from_____.
Option A:	Atmosphere
Option B:	propelling body
Option C:	from atmosphere & fuel tank
Option D:	fuel tank only

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Question	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	A
Q2.	A
Q3.	B
Q4	A
Q5	A
Q6	A
Q7	A
Q8.	C
Q9.	B
Q10.	B
Q11.	D
Q12.	C
Q13.	C
Q14.	A
Q15.	A
Q16.	A
Q17.	B
Q18.	C
Q19.	C
Q20.	D
Q21.	A
Q22.	D
Q23.	C
Q24.	D
Q25.	A