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COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

VALUE ADDED COURSES
2020-2021
Department of Mechanical Engineering
20ME01-Hybrid Electric Vehicles
MARK SHEET

Sl. No	Register Number	Student Name	MARKS
1	17TB3101	AKASH.P	96
2	17TB3102	DENNIS REGANNATHAN.J	92
3	17TB3103	GOVINDHAN.D	88
4	17TB3104	KARTHIKEYAN.M	84
5	17TB3105	KARUNAMOORTHY.S	92
6	17TB3106	KUMARAGURU.C	88
7	17TB3107	KUMARAVEL.K	96
8	17TB3108	MANIKANDAN.M	88
9	17TB3109	MICHEAL JASS.R	84
10	17TB3110	MOHAMAD ALLAUDDIN.A	96
11	17TB3111	MUTHUKUMARAN.S	84
12	17TB3112	NIHAL AHAMED.N	88
13	17TB3114	PATTAPPAN.S	96
14	17TB3115	PRAVEENKUMAR.N	92
15	17TB3116	SIVABALAN.P	88

HOD

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Dr. S. SEENUVASAMURTHI, M.E., Ph.D.
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Puducherry - 605 110

VALUE ADDED COURSES
2020-2021
Department of Mechanical Engineering

20ME01-Hybrid Electric Vehicles

NAME:

CLASS:

DATE:

1. What is the primary source of propulsion in an electric vehicle?
a) Gasoline
b) Diesel
c) Electric motor
d) Hydrogen fuel cell

Answer: c) Electric motor

2. What is the main component that stores electrical energy in an electric vehicle?

a) Radiator

b) Battery pack

c) Carburetor

d) Exhaust pipe

Answer: b) Battery pack

3. Which type of battery is commonly used in modern electric vehicles due to its high energy density and efficiency?

a) Nickel-Cadmium (NiCd)

b) Lead-Acid

c) Lithium-Ion (Li-ion)

d) Alkaline

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Answer: c) Lithium-Ion (Li-ion)

4. What feature in electric vehicles converts kinetic energy generated during braking into electrical energy to recharge the battery?

a) Solar panels

b) Regenerative braking

c) Turbocharger

d) Radiator fan

Answer: b) Regenerative braking

5. Where can electric vehicles be charged?

a) Gas stations

b) charging stations

c) Car wash

d) Traffic signals

Answer: b) Charging stations

6. What does EV stand for in the context of electric vehicles?

a) Electric Voltage

b) Eco-Vehicle

c) Electric Vehicle

d) Efficient Van

Answer: c) Electric Vehicle

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7. Which type of electric vehicle has both an electric motor and an internal combustion engine?

a) Battery Electric Vehicle (BEV)

b) Hybrid Electric Vehicle (HEV)

c) Plug-in Hybrid Electric Vehicle (PHEV)

d) Fuel Cell Electric Vehicle (FCEV)

Answer: c) Plug-in Hybrid Electric Vehicle (PHEV)

8. What is the driving range of an electric vehicle?

a) The top speed it can reach

b) The time it takes to charge the battery

c) The distance it can travel on a single charge

d) The weight of the vehicle

Answer: c) The distance it can travel on a single charge

9. What is the process of charging an electric vehicle at home using a regular electrical outlet called?

a) Fast charging

b) Level 3 charging

c) Level 2 charging

d) Trickle charging

Answer: d) Trickle charging

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10. Which component in an electric vehicle allows the driver to control the speed and direction of the vehicle?

a) Battery pack

b) Electric motor

c) Charging port

d) Drive-by-wire system

Answer: d) Drive-by-wire system

11. What is the term used for electric vehicles that have both an electric motor and an internal combustion engine, but the engine is used as a backup to extend range?

a) Battery Electric Vehicle (BEV)

b) Plug-in Hybrid Electric Vehicle (PHEV)

c) Hybrid Electric Vehicle (HEV)

d) Fuel Cell Electric Vehicle (FCEV)

Answer: b) Plug-in Hybrid Electric Vehicle (PHEV)

12. Which type of electric vehicle relies solely on electricity and does not have an internal combustion engine?

a) Battery Electric Vehicle (BEV)

b) Plug-in Hybrid Electric Vehicle (PHEV)

c) Hybrid Electric Vehicle (HEV)

d) Fuel Cell Electric Vehicle (FCEV)

Answer: a) Battery Electric Vehicle (BEV)

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13. What is the term used for the process of supplying electric power to an electric vehicle for charging purposes?

a) Electrification

b) Charging

c) Plugging in

d) Refueling

Answer: b) Charging

14. Which type of electric vehicle uses hydrogen and oxygen to generate electricity and produce water vapor as the only byproduct?

a) Battery Electric Vehicle (BEV)

b) Plug-in Hybrid Electric Vehicle (PHEV)

c) Hybrid Electric Vehicle (HEV)

d) Fuel Cell Electric Vehicle (FCEV)

Answer: d) Fuel Cell Electric Vehicle (FCEV)

15. What is the approximate charging time for a fast-charging station to charge an electric vehicle to 80% capacity?

a) 5 minutes

b) 30 minutes

c) 1 hour

d) 8 hours

Answer: b) 30 minutes

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16. Which type of electric vehicle uses a combination of an electric motor and a traditional internal combustion engine, where the engine is the primary source of propulsion?

a) Battery Electric Vehicle (BEV)

b) Plug-in Hybrid Electric Vehicle (PHEV)

c) Hybrid Electric Vehicle (HEV)

d) Fuel Cell Electric Vehicle (FCEV)

Answer: c) Hybrid Electric Vehicle (HEV)

17. What is the term used for the energy efficiency of an electric vehicle, measured in miles (or kilometers) driven per unit of energy consumed (e.g., miles per kilowatt-hour)?

a) Energy density

b) Energy efficiency

c) Range anxiety

d) Electric vehicle efficiency

Answer: d) Electric vehicle efficiency

18. Which component of an electric vehicle's charging system controls the flow of electricity to the battery during charging?

a) Charging port

b) Charging cable

c) Onboard charging controller

d) Power inverter

Answer: c) Onboard charging controller

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19. What is the process called when an electric vehicle uses its own energy to produce electricity and supply it back to the grid during peak demand periods?

a) Vehicle-to-Grid (V2G)

b) Grid-to-Vehicle (G2V)

c) Peak demand charging

d) Grid balancing

Answer: a) Vehicle-to-Grid (V2G)

20. Which type of electric vehicle uses a combination of an electric motor and a traditional internal combustion engine, where the electric motor is the primary source of propulsion?

a) Battery Electric Vehicle (BEV)

b) Plug-in Hybrid Electric Vehicle (PHEV)

c) Hybrid Electric Vehicle (HEV)

d) Fuel Cell Electric Vehicle (FCEV)

Answer: b) Plug-in Hybrid Electric Vehicle (PHEV)

21. What is the term used for the process of recharging an electric vehicle at a fast-charging station that provides higher power output than standard charging stations?

a) Level 3 charging

b) Rapid charging

c) Trickle charging

d) Level 2 charging

Answer: a) Level 3 charging

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22. Which type of electric vehicle uses a fuel cell to generate electricity from hydrogen to power an electric motor?

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c) Hybrid Electric Vehicle (HEV)

d) Fuel Cell Electric Vehicle (FCEV)

Answer: d) Fuel Cell Electric Vehicle (FCEV)

23. Which organization or standard is responsible for establishing the charging interface protocol used in many electric vehicles and charging stations?

a) ISO 9001

b) UL (Underwriters Laboratories)

c) SAE International (Society of Automotive Engineers)

d) IEEE (Institute of Electrical and Electronics Engineers)

Answer: c) SAE International (Society of Automotive Engineers)

24. What is the term used for the fear or anxiety experienced by electric vehicle drivers about running out of battery charge before reaching their destination?

a) Range anxiety

b) charging stress

c) Battery panic

d) EV worry

Answer: a) Range anxiety

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25. Which component of an electric vehicle cools down the electric motor and other components to prevent overheating during operation?

a) Radiator

b) Exhaust pipe

c) Cooling fan

d) Carburetor

Answer: c) Cooling fan

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NAME: GOVINDHAN.D

CLASS: IV/MECH

DATE: 20/09/2020

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22/25 88%

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c) Onboard charging controller

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c) Cooling fan

d) Carburetor

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Certificate of Completion

2020-2021

This is to certify that Mr/Ms ..... KUMARAVEL K .....

Year..IV..... Department..MECH..... has successfully Completed the Value added course.

COURSE TITLE: ..HYBRID ELECTRIC VEHICLES..... SCORE: ..98.....

COURSE DURATION: .....9-9-20 to 13-9-20.....

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VALUE ADDED COURSES

2020-2021

Department of Mechanical Engineering

20ME02 - Introduction to fracture mechanics

MARK SHEET

Sl. No	Register Number	Student Name	MARKS
1	18TB1201	AJAY.D	88
2	18TB1202	AMEENUL ISLAM.N	96
3	18TB1204	DHAYANITHI.A	84
4	18TB1206	EZHILARASAN.S	96
5	18TB1207	GANESH.M	84
6	18TB1208	GNANASEKAR.S	88
7	18TB1209	KARTHIKEYAN.S	96
8	18TB1210	KIRAN.K	92
9	18TB1211	KOWS.R	88
10	18TB1212	MOHAMED IRSHATH.R	88
11	18TB1213	SARANVEL.M	96
12	18TB1214	SELVAGANAPATHY.T	84
13	18TB1215	SIVA.A	96
14	18TB1216	SIVARAJ.K	84
15	18TB1217	SIVASANKARAN.K	88

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16	18TB1218	VUBALANKA SAI VENKATA SRIRAM	96
17	18TBL087	GOKULAKRISHNAN.S	88

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VALUE ADDED COURSES
2020-2021
Department of Mechanical Engineering

20ME02-Introduction to fracture mechanics

NAME:

CLASS:

DATE:

1. Which of the following part of mechanics deals with study of crack propagation?
a) Solid mechanics
b) Fluid mechanics
c) Applied mechanics
d) Fracture mechanics

Answer: d

2. Which of the following is not a mode of application of force for crack propagation?
a) Opening mode
b) sliding mode
c) Tearing mode
d) rolling mode

Answer: d.

3. Fractography is the study of surfaces of materials which are fractured
a) True
b) False

Answer: a

4. What amount of actual stress would be needed to fracture bulk glass?
a) 10 MPa
b) 20 MPa
c) 100 MPa
d) 50 MPa

Answer: c

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5. What is the theoretical amount of stress needed to fracture bulk glass?
a) 1000 MPa
b) 2000 MPa
c) 10000 MPa
d) 5000 MPa

Answer: c

6. According to Griffith if f is stress at fracture and a is flaw length then which of the following is true?
a) $f*a^{1/2}$
b) f*a
c) f/a
d) $f/a^{1/2}$

Answer: a

7. Which of the following scientist proposed a modification to Griffith's theory?
a) G. R. Irwin
b) Albert Einstein
c) Isaac Newton
d) there was no modification proposed.

Answer: a

8. What is the unit of G from Griffith's energy criterion?
a) $J\text{-}m^2$
b) J-m
c) J/m^2
d) J/m

Answer: c.

9. For polymers close to glass transition temperature which of the following can be a value of G?
a) 1 J/m^2
b) 900 J/m^2
c) 1200 J/m^2
d) 1400 J/m^2

Answer: b.

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10. Fracture stress decreases as fiber diameter decreases.
a) True
b) False

Answer: b

11. The stress intensity for a plate is given as $K=\sigma\sqrt{(\pi a)}\tan(\pi ta)$; where a is crack length equal to 6 mm, t is the thickness of the plate equal to 1 cm, and σ is the nominal stress applied. Determine the maximum allowable stress if $K_{Ic}=50$ MPa $m^{-1/2}$.
a) 100 MPa
b) 145 MPa
c) 200 MPa
d) 500 MPa

Answer: b

12. The value of K_{Ic} _____ with increase in the temperature and _____ with increase in the strain rate.
a) Increases, decreases
b) increases, Increases
c) decreases, decreases
d) increases, Increases

Answer: a

13. The K_{IC} is independent of heat treatment, texture, melting practice, impurities, and inclusion, etc.
a) True
b) False

14. The notch in the thick plate is far more damaging than the groove in a thin plate because of the _____
a) plane-stress
b) plane-strain
c) triaxle state of stress
d) uniaxial state of stress

Answer: b

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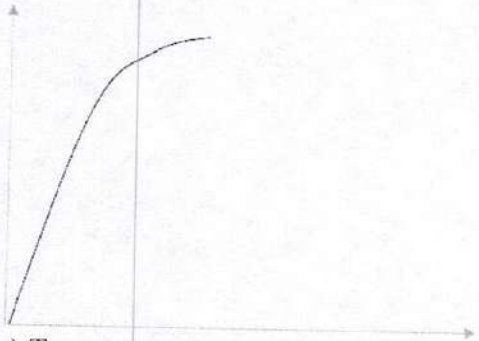
15. The minimum thickness of the material to achieve the condition of plane strain is given by _____

a) $B=2.5\ (K_{IC}/\sigma_o)$
b) $B=2.5\ (K_{IC}/\sigma_o)^2$
c) $B=2.5\ (K_{IC}/\sigma_o)^{1/2}$
d) $B=2.5\ (K_{IC}/\sigma_o)^{-1/2}$

Answer: b

16. The fracture toughness of the material is given as 25 MPa $m^{1/2}$, and the yield strength is equal to 600 MPa. Find the minimum thickness of the material to achieve the condition of plane strain?
a) 5 mm
b) 4.3 mm
c) 5 cm
d) 10 mm

17. Load vs. notch displacement curve for very brittle elastic material is given by the following curve.



a) True
b) False

Answer: b

18. According to Irwin's correction of plasticity at the crack tip, the sufficient crack length is given as the actual crack length plus the radius of the plastic zone. The radius of the plastic zone (r_p) in case of plane stress is given as _____

a) $r_p=1/2\ K^2/\sigma_o^2$
b) $r_p=1/2\ K^2/\pi\sigma_o^2$
c) $r_p=1/2\ K^2/\sigma_o$
d) $r_p=1/2\ K/\sigma_o$

Answer: b

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19. According to Irwin's correction of plasticity at the crack tip, the effective crack length is given as the actual crack length plus the radius of the plastic zone. The radius of the plastic zone (r_p) in case of plane strain is given as _____

a) $r_p=1/2\ K^2/\sigma_o^2$
b) $r_p=1/6\ K^2/\pi\sigma_o^2$
c) $r_p=1/8\ K^2/\sigma_o$
d) $r_p=1/2\ K/\sigma_o$

Answer: b.

20. A copper plate with an initial crack length of 30 mm is subjected to the stress of 500 MPa normal to crack. If the yield strength of the copper is 1000 MPa, Find the plastic zone size? Assume the plate is infinity wide.

a) 1.19 mm
b) 2.1 mm
c) 3.5 mm
d) 10 mm

Answer: a

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(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)

VALUE ADDED COURSES

2020-2021

Department of Mechanical Engineering

20ME02-Introduction to fracture mechanics

NAME: AMEENUL ISLAM.N

CLASS: III/MECH

DATE: 20/08/2020

1. Which of the following part of mechanics deals with study of crack propagation?
a) Solid mechanics
b) Fluid mechanics
c) Applied mechanics
d) Fracture mechanics

24/25 96%

2. Which of the following is not a mode of application of force for crack propagation?
a) Opening mode
b) sliding mode
c) Tearing mode
d) rolling mode

3. Fractography is the study of surfaces of materials which are fractured
a) True
b) False

4. What amount of actual stress would be needed to fracture bulk glass?
a) 10 MPa
b) 20 MPa
c) 100 MPa
d) 50 MPa

5. What is the theoretical amount of stress needed to fracture bulk glass?
a) 1000 MPa
b) 2000 MPa
c) 10000 MPa
d) 5000 MPa

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6. According to Griffith if f is stress at fracture and a is flaw length then which of the following is true?
a) $f*a^{1/2}$
b) f*a
c) f/a
d) $f/a^{1/2}$

7. Which of the following scientist proposed a modification to Griffith's theory?
a) G. R. Irwin
b) Albert Einstein
c) Isaac Newton
d) there was no modification proposed.

8. What is the unit of G from Griffith's energy criterion?
a) $J\text{-}m^2$
b) J-m
c) J/m^2
d) J/m

9. For polymers close to glass transition temperature which of the following can be a value of G?
a) 1 J/m^2
b) 900 J/m^2
c) 1200 J/m^2
d) 1400 J/m^2

10. Fracture stress decreases as fiber diameter decreases.
a) True
b) False

11. The stress intensity for a plate is given as $K=\sigma\sqrt{(\pi a)}\tan(\pi ta)$; where a is crack length equal to 6 mm, t is the thickness of the plate equal to 1 cm, and σ is the nominal stress applied. Determine the maximum allowable stress if $K_{Ic}=50$ MPa $m^{-1/2}$.
a) 100 MPa
b) 145 MPa
c) 200 MPa
d) 500 MPa

12. The value of K_{Ic} _____ with increase in the temperature and _____ with increase in the strain rate.
a) Increases, decreases
b) increases, Increases
c) decreases, decreases

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d) increases, Increases

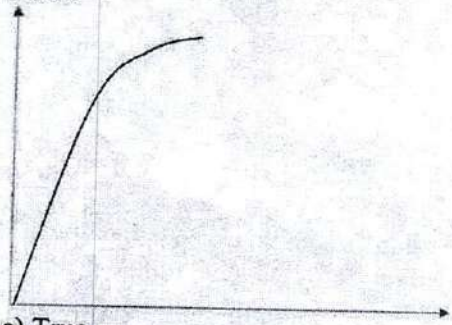
13. The K_{IC} is independent of heat treatment, texture, melting practice, impurities, and inclusion, etc.
a) True
b) False

14. The notch in the thick plate is far more damaging than the groove in a thin plate because of the _____
a) plane-stress
b) plane-strain
c) triaxle state of stress
d) uniaxial state of stress

15. The minimum thickness of the material to achieve the condition of plane strain is given by _____
a) $B=2.5\ (K_{IC}/\sigma_o)$
b) $B=2.5\ (K_{IC}/\sigma_o)^2$
c) $B=2.5\ (K_{IC}/\sigma_o)^{1/2}$
d) $B=2.5\ (K_{IC}/\sigma_o)^{-1/2}$

16. The fracture toughness of the material is given as 25 MPa $m^{1/2}$, and the yield strength is equal to 600 MPa. Find the minimum thickness of the material to achieve the condition of plane strain?
a) 5 mm
b) 4.3 mm
c) 5 cm
d) 10 mm

17. Load vs. notch displacement curve for very brittle elastic material is given by the following curve.



a) True
b) False

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18. According to Irwin's correction of plasticity at the crack tip, the sufficient crack length is given as the actual crack length plus the radius of the plastic zone. The radius of the plastic zone (r_p) in case of plane stress is given as _____
a) $r_p=1/2\ K^2/\sigma_o^2$
b) $r_p=1/2\ K^2/\pi\sigma_o^2$
c) $r_p=1/2\ K^2/\sigma_o$
d) $r_p=1/2\ K/\sigma_o$

19. According to Irwin's correction of plasticity at the crack tip, the effective crack length is given as the actual crack length plus the radius of the plastic zone. The radius of the plastic zone (r_p) in case of plane strain is given as _____
a) $r_p=1/2\ K^2/\sigma_o^2$
b) $r_p=1/6\ K^2/\pi\sigma_o^2$
c) $r_p=1/8\ K^2/\sigma_o$
d) $r_p=1/2\ K/\sigma_o$

20. A copper plate with an initial crack length of 30 mm is subjected to the stress of 500 MPa normal to crack. If the yield strength of the copper is 1000 MPa, Find the plastic zone size? Assume the plate is infinity wide.
a) 1.19 mm
b) 2.1 mm
c) 3.5 mm
d) 10 mm

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2020-2021

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Year ..... III ..... Department ..... MECH ..... has successfully Completed the Value added course.

COURSE TITLE: ..... INTRODUCTION to FRACTURE MECHANICS ..... SCORE: ..... 88 .....

COURSE DURATION: ..... 9-8-20 to 13-8-20 .....

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VALUE ADDED COURSES

2020-2021

Department of Mechanical Engineering

20ME03- Oil Hydraulics and Pneumatics

MARK SHEET

Sl. No	Register Number	Student Name	MARKS
1	19TB1201	ABDUL AJEES.M	84
2	19TB1202	ARUNESHWAR. J	96
3	19TB1203	DEVA. R	84
4	19TB1205	MOHANDOSS. A	88
5	19TB1206	NANTHAKUMAR. S	96
6	19TB1207	NARAYANA MOORTHI.S	92
7	19TB1208	PONNAMBALAM. E	88
8	19TB1209	PRADEEPRAJ.R	96
9	19TB1211	SILAMBU KALIDASAN. M	92
10	19TB1212	VASANTHARAJ. R	88
11	19TBL055	GOUTHAM.N	84

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NAME:

CLASS:

DATE:

1. The study of LPG powered system is the example of_____.

(a) Hydraulics
(b) Pneumatics
(c) All of the above
(d) None of the above

Answer: (b)

2. Hydraulics is the study of_____.

(a) Compressible Fluids
(b) Incompressible Fluids
(c) Ideal Fluids
(d) Gaseous Fluids

Answer: (b)

3. Pneumatics is the study of_____.

(a) Compressible Fluids
(b) Incompressible Fluids
(c) Ideal Fluids
(d) Liquid Fluids

Answer: (a)

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4. Which of the following is the example of stationary hydraulics?

(a) Agricultural machinery
(b) Construction machinery
(c) Metal-forming presses
(d) Elevating platforms

Answer: (c)

5. Which system posses the lowest weight to power ratio?

(a) Pneumatic system
(b) Hydraulic system
(c) Mechanical system
(d) Electrical system

Answer:(b)

6. The dashed line is the symbol of_____.

(a) Flow line
(b) Drain line
(c) Pressure line
(d) Component envelope

Answer: (b)

7. We can draw Fluid conditioners in the_____.

(a) Diamond shape
(b) Round shape
(c) Box shape
(d) Rectangular shape

Answer: (a)

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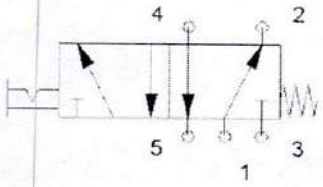
8. 

is the symbol of_____.

(a) 2/5 DCV
(b) 5/2 DCV
(c) 2/2 DCV
(d) 4/2 DCV

Answer: (b)

9. The hydraulic system is_____.

(a) Less precise than a pneumatic system
(b) More precise than a pneumatic system
(c) Both hydraulic and pneumatic systems are the same on basis of precision
(d) None of the given

Answer: (b)

10. Which of the following systems generate more energy when used in industrial applications?

(a) Hydraulic systems
(b) Pneumatic systems
(c) Both systems generate same energy
(d) cannot say

Answer: (a)

11. Rotary motion in a hydraulic power unit is achieved by using_____.

(a) Hydraulic cylinder
(b) Pneumatic cylinder
(c) Both hydraulic and pneumatic cylinder
(d) None of the given

Answer:(d)

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12. Which of the following statements are false?

1. Pressure is resistance to flow
2. Friction creates pressure
3. Load cannot create pressure on the system
4. The pressure developed decreases if load offers more resistance

(a) 1, 2 & 3
(b) 1 & 2
(c) 3 & 4
(d) All of them

Answer: **(c)**

13. At low pressures, liquids are_____.

(a) Compressible
(b) Incompressible
(c) Unpredictable

Answer: **(b)**

14. How is power transmitted in fluid power systems?

(a) Power is transmitted instantaneously
(b) Power is transmitted gradually
(c) Both of the given
(d) None of the given

Answer: **(a)**

15. Pressure of 1 bar is equal to_____.

(a) 14.5 psi
(b) 145 psi
(c) 12.5 psi
(d) 145 x 10-6 psi

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Answer: **(a)**

16. Which fluid is used in hydraulic power systems?

(a) Water
(b) Oil
(c) Incompressible fluids
(d) All of the given

Answer: **(d)**

17. Heavy lifting work is often accomplished by shifting fluids in big machines. The power system of such machines can be described as_____.

(a) Reciprocating
(b) Pneumatic
(c) Hydraulic
(d) Hybrid

Answer: **(c)**

18. The scientific principle that makes hydraulic systems possible is_____.

(a) Pascal's principle
(b) Boyle's law
(c) Bernoulli's principle
(d) The fluid flow principle

Answer: **(a)**

19. Pneumatic and other power systems can support three kinds of motion, they are_____.

(a) Linear, reciprocating, and random motion
(b) Linear, flowing, and rotary motion
(c) Linear, zigzag, and spiral motion
(d) Linear, reciprocating, and rotary motion

Answer: **(d)**

20. Pneumatic systems usually do not exceed:

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(a) 1 hp
(b) 1-2 hp
(c) 2-3 hp
(d) 4-5 hp

Answer: **(a)**

21. In which type of system, power transmission takes place through compressed air?

(a) Fluid power system
(b) Hydraulic system
(c) Pneumatic system
(d) Stepper motors

Answer: **(c)**

22. The compressed air flows to the actuator through ____

(a) Pipes and valves
(b) Shafts
(c) Motors
(d) Flow control valve

Answer: **(a)**

23. Which part of the Pneumatic system stores the compressed air?

(a) Air dryer
(b) Air compressor
(c) Air receiver tank
(d) Air lubricator

Answer: **(c)**

24. Which among the following is an advantage of the Pneumatic system?

(a) The requirement of a lubricator
(b) Runs continuously

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(c) Use of silencers

(d) Low viscosity

Answer: **(b)**

25. The study of pneumatics deals with the system operated with_____.

(a) Oils

(b) Liquids

(c) Air-only

(d) Gases

Answer: **(d)**

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NAME: PRADEEPRAJ.R

CLASS: II/MECH

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(c) Metal-forming presses
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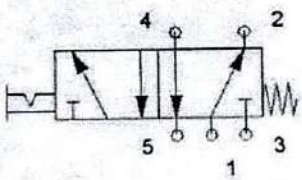
8. 

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(b) Air compressor
(c) Air receiver tank
(d) Air lubricator

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Year..... II ..... Department..... MECH ..... has successfully Completed the Value added course.

COURSE TITLE: ..... Oil HYDRAULICS & PNEUMATICS .....

SCORE: ..... 84 .....

COURSE DURATION: ..... (9-8-20 to 13-8-20) .....

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