

I- Write about 8 lines on only one of the following:

(10 marks)

1- Refrigeration.

2- Heat Treatment of Metals.

II- Read the following passage, then answer the questions:

(10 marks)

Metal forming refers to any process that involves molding or shaping a certain type of metal into a desired form. Forming is classified into five groups are mechanical working, casting, electroforming, fiber and powder metal forming and joining. Mechanical working includes processes like drawing, forging, and rolling. There are several kinds of equipment that is used in metal forming. Some factors such as accuracy and positioning should always be taken into consideration in metal forming. There are different processes of metal forming such as: rolling, drawing, forging, and modeling.

**Questions:**

- 1- What does mechanical working include?
- 2- Define metal forming.
- 3- What are metal forming processes?
- 4- Mention some kinds of metal forming equipment.
- 5- What are five groups of forming?

III. Do as shown between brackets. Answer ONLY FIVE:

(10 marks)

- 1- The technician came to repair the refrigerator. (ask question)
- 2- Two .....scissors .....made of stainless steel. (fill in the space)
- 3- Engineers have invented a new machine. (passive)
- 4- These air conditioners were difficult to repair. (begin with it)
- 5- Dry air – minimize – different – warm. (give the opposites)
- 6- What is the process of metal working? (answer)
- 7- What is the technical report? Why is it written? (answer)

IV. Translate the following:

(10 marks)

A) - Translate into Arabic:

Air conditioning is the process in which the temperature, humidity, quality or distribution of air is controlled in a confined space. There are several types of air conditioners such as window, split, packaged and central.

B) - Translate into English:

اللحام هو عملية التصنيع التي توصل المعادن مع بعضها البعض. يمكن تقسيم عمليات اللحام إلى مجموعتين رئيسيتين: اللحام بالصهر واللحام في حالة الصلابة.

Good Luck & Best Wishes



**MINISTRY OF HIGHER EDUCATION  
INDUSTRIAL TECHNICAL INSTITUTES  
DIPLOMA FINAL EXAMINATION-1<sup>st</sup> TERM 2017/2018**

English Language  
Mechanical Sections

شعب توريد وتكييف / تشكيل / تشغيل  
نظام حديث

Time : 1 Hour  
Total Mark : 40  
2018 يناير

( 10 Marks )

I. Write about 8 lines on only one of the following:

1- Metal working.

2- Types of air conditioners

( 10 Marks )

II. Read the following passage, then answer the questions.

Welding is a fabrication process that joins metals together. In fusion welding, heat is used to melt the base metals and provide strength to the welded joint. This category comprises the most widely used welding processes such as arc welding, resistance welding and oxy-acetylene welding. Oxy-acetylene welding is well suited for industrial applications as well as repair workshops. In solid state welding, metal joining processes result from application of pressure alone or combination of heat and pressure. No filler metal is utilized in this type.

**QUESTIONS.**

1- What are the two major groups of welding ?

2- Where is oxy-acetylene welding used ?

3- In solid state welding a filler metal is used.

4- What is used to melt the base metals in fusion welding ?

5- Resistance welding belongs to .....

( put √ or x )

( complete )

III. Do as shown in brackets. Answer ONLY FIVE :

( 10 Marks )

1- The refrigerant changes from the gaseous to the liquid state by absorbing heat. ( correct )

2- They will buy a new machine next week.

( ask a question )

3- absorb - low - dry air - indoor

( give the opposites )

4- Define refrigeration.

(-answer-)

5- The workshop was not expensive to rent.

( begin with " It" )

6- How can quenching be performed ?

( answer )

7- What is the main part of the technical report? Why?

( answer )

IV. Translate the following:

( 10 Marks )

1- Both refrigeration and air conditioning systems are based on the same mechanism : the cooling of a substance and space. Both systems have the same components such as a compressor, evaporator, fan, condenser and expansion valve.

2- المعالجة الحرارية هي عملية تسخين وتبريد المعادن لتحقيق الخواص الطبيعية والميكانيكية المرغوبة من خلال تغيير البنية البلورية للمعادن.



**MINISTRY OF HIGHER EDUCATION  
INDUSTRIAL TECHNICAL INSTITUTES  
DIPLOMA FINAL EXAMINATION-1<sup>st</sup> TERM 2016/2017**

English Language  
Mechanical Sections

٧٢٩  
شعب تبريد وتكييف / تشكيل / تشغيل  
نظام حديث

Time : 1 Hour  
Total Mark : 40  
2017

I. Write about 8 lines on only one of the following: (10 Marks)

1- Welding processes.

2- Air conditioners.

II. Read the following passage, then answer the questions. (10 Marks)

Both refrigeration and air conditioning systems are based on the same mechanism: the cooling of a substance and space. Both systems have the same components such as a compressor, evaporator, fans, condenser and expansion valve. The operating principle of the refrigeration process depends on the action of the refrigerant inside the cycle which absorbs heat from the environment in the evaporation phase, and dissipates it in the condensation phase. The refrigerant changes from the liquid to the gaseous state by absorbing a certain amount of heat from the surrounding environment, thus cooling the environment. The refrigerant, in the gaseous state, gives up the absorbed heat, and returns to liquid.

**QUESTIONS**

- 1- What is the mechanism of refrigeration and air conditioning systems?
- 2- What does the operating principle of the refrigeration process depend on?
- 3- How does the liquid refrigerant change to the gaseous state?
- 4- When does the refrigerant return to liquid?
- 5- Mention the components of refrigeration system.

III. Do as shown in brackets. Answer ONLY FIVE : (10 Marks)

- 1- What are the two units of a split air conditioner? (answer)
- 2- minimize - warm - high - dry air. (give the opposites)
- 3- What does metal working cover? (answer)
- 4- heat - the base metals - In fusion welding - to melt - is used. (rearrange)
- 5- They repaired three air conditioners. (ask a question)
- 6- Why is a technical report written? (answer)
- 7- These machines are not easy to maintain. (begin with "It")

IV. Translate the following: (10 Marks)

\* Metal forming refers to any process that involves molding or shaping a certain type of metal into a desired form. There are different processes of metal forming such as rolling, drawing, forging and modeling.

\* المعالجة الحرارية هي عملية تسخين وتبريد المعادن لتحقيق الخواص الطبيعية والميكانيكية المرغوبة.



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**DIPLOMA FINAL EXAMINATION-1<sup>st</sup> TERM 2017/2018**

English Language  
Mechanical Sections

شعبه توريد وتكليف / تشكيل / تشغيل

Time : 1 Hour  
Total Mark : 40

نظام حديث

2018

I. Write about 8 lines on only one of the following:

1-Refrigeration

2- Welding.

( 10 Marks )

II. Read the following passage, then answer the questions.

( 10 Marks )

Heat treatment is the process of heating and cooling metals to achieve desired physical and mechanical properties through modification of their crystalline structure . The most common reasons to heat treatment include increasing strength or hardness ,increasing toughness , improving ductility and maximizing corrosion resistance . The most common heat treatment processes are :annealing ,quench hardening and tempering . Annealing is a thermal process used to bring a metal closer to its equilibrium state .Quenching is an accelerated method of bringing a metal back to room temperature .It can be performed with forced air convection , oil , fresh and salt water .Tempering is a heat treatment process that improves the ductility and toughness of metals with careful temperature and time control .

**QUESTIONS.**

1-What are the properties added to metal by heat treatment ?

2-Define tempering .

3-How can quenching be performed ?

4- Mention the most common heat treatment processes .

5- ..... brings a metal closer to its equilibrium state .

" (fill in the gap )"

III. Do as shown in brackets. Answer **ONLY FIVE** :

( 10 Marks )

1- warm - inside - absorb - low

( give the opposites )

2- Welders use goggles during welding .

( put in passive )

3- Why are calipers used ?

( answer )

4-Why is technical report written ?

( answer )

5- What are window air conditioners comprised of ?

( answer )

6-There are different processes of metal forming such as ..... and .....(complete)

7- Ammonia refrigerant is dangerous to use .

( begin with "It " )

IV. Translate the following:

( 10 Marks )

1- There are several types of air conditioners such as window , split , packaged and central. Air conditioners are often rated according to BTU which measures the amount of heat an air conditioner can extract from a room .

2- ان عملية تشغيل المعادن هي علم وفن وهواية وصناعته وتجارة . ويمكن تقسيم عملية تشغيل المعادن الى المجموعات التالية : التشكيل والقطع والتوصيل .



REDMI NOTE 9  
 AHMED ATIA



**MINISTRY OF HIGHER EDUCATION**  
**INDUSTRIAL TECHNICAL INSTITUTES**  
**DIPLOMA FINAL EXAMINATION-1<sup>st</sup> TERM 2016/2017**

English Language  
Mechanical Sections

شعب تبريد وتكييف / تشكول / تشغيل  
نظام حديث

Time : 1 Hour  
Total Mark : 40  
2017

I. Write about 8 lines on only one of the following: ( 10 Marks)  
1- Metal working. 2- Refrigeration.

II. Read the following passage, then answer the questions. ( 10 Marks)

There are several types of air conditioners such as window, split, packaged and central. Air conditioners are often rated according to Btu (British thermal unit), which measures the amount of heat an air conditioner can extract from a room. The split air conditioner comprises of two units: the outdoor unit and the indoor unit. The outdoor unit, fitted outside the room, houses the important components like the compressor, condenser and expansion valve. The indoor unit comprises the evaporator or cooling coil, a long blower and the filters. After passing from the expansion valve, the chilled Freon fluid enters the cooling coil. The blower sucks the hot and humid air from the room and blows it over the cooling coil.

**QUESTIONS.**

- 1- How are air conditioners often rated?
- 2- What does the split air conditioner comprise of?
- 3- Where is the cooling coil found?
- 4- What is the function of the blower?
- 5- Mention four types of air conditioners.

III. Do as shown in brackets. Answer ONLY FIVE : ( 10 Marks)

- 1- Why is heat treatment done? ( answer )
- 2- He bought a new tool kit yesterday. ( ask a question )
- 3- What does arc welding use? Why? ( answer )
- 4- Window air conditioners are only blow 18000 Btu. (put  $\sqrt$  or X)
- 5- The refrigerator was difficult to repair. ( begin with "It" )
- 6- What is the step to be followed after marking out? ( answer )
- 7- What is the main part of the technical report? Why? ( answer )

IV. Translate the following: ( 10 Marks )

\* Welding is a fabrication process that joins metals together. This is often done by melting the work pieces and adding a filler material to form a pool of molten material that cools to become a strong joint, but sometimes pressure is used to produce the weld.

\* يعتمد مبدأ التشغيل في عملية التبريد على عمل وسيط التبريد داخل الدورة والذي يمتص الحرارة من البيئة المحيطة في مرحلة التبخير ويبددها في مرحلة التكثيف.



1. Write 5 sentences in only one of the following :- (10 marks)  
(A) Refrigeration (B) Heat treatment

2. Read the following passage, and then answer the question:- (10 marks)

Welding is a fabrication process that joins metals together. This is done by melting the work pieces and adding a filler material to form a pool of molten material that cools to become a strong joint. Welding processes can be divided into two major groups, fusion welding and solid - State welding. In fusion welding, heat is used to melt the base metals and provide strength to the welded joint.

1. What is welding ?
2. How is welding done ?
3. What are the two major groups of welding ?
4. What is used to melt the base metals in fusion category ?
5. Welding processes can be divided into three major groups (✓ or ×)

3. Do as shown between brackets (choose only five) :- (10 marks)

1. What are most common types of air conditioners ? (answer)
2. What is the main part of the technical report ? (answer)
3. quick - easy - wide - minimize . (opposites)
4. The refrigerator is difficult to repair (Begin with It)
5. Heat treatment is the process of heating metals . (correct)
6. .... Is a process that reshapes a metal . (complete)
7. We installed seven air conditioners in this building. (passive)

4. Translation :-

Translate into Arabic :-

Metal working is the process of working with metals to create individual parts. Metal working is a science, art, hobby, industry and trade.

Translate into English :-

يتكون جهاز تكييف الهواء المنفصل من وحدتين هما الوحدة الخارجية والوحدة الداخلية



Refrigeration & Air conditioning, and Metal Working & Forming departments

1- Write a paragraph on One of the following topics : 10 Marks

A- Metal working

B- Heat treatment process

2- Read the following passage then answer the questions below : 10 Marks

Both refrigeration and air conditioning systems are based on the same mechanism : the cooling of substance and space . Both systems have the same components such as compressor , evaporator , fan , condenser , and expansion valve . Despite this , there are substantial differences between the two systems, the design methods and structures they are used in . Refrigeration is the process by which the temperature of fluids or bodies in general is decreased.

Questions:

1- What is refrigeration ?

2- The substantial differences between refrigeration and air conditioning systems are — (1) — , — (2) — they are used in .

3- In refrigeration , the fluids or bodies temperature is increased ( Correct )

4- Mention some components of the refrigeration and air conditioning systems?

5- Air conditioning system only is based on the mechanism : the cooling of substance and space ( True ✓ or False X).

3- Do as shown between brackets. Choose only FIVE: 10 Marks

1- Who reads the technical report

( Answer )

2- What is welding ?

( Answer )

3- This machine is ( bad — worse — worst ) than your machine .

( choose )

4- No , he did not repair the machine.

( Make a question )

5- What is the function compressor ?

( Answer )

6- ————, is the cheapest air conditioner

( Fill in the space )

7- Ammonia is dangerous to use

( begin with It )

4- Translation.

10 Marks

A- Translate into Arabic

Air conditioning is the process in which the temperature , humidity , quality or distribution of air is controlled in a confined space .

B- Translate into English

تتم عمليات التكييف إلى مجموعتين أساسيتين ، التكييف بالمتنزه و التكييف في حالة الصلافة



**Refrigeration & Air conditioning, and Metal Working & Forming departments**

1- Write a paragraph on One of the following topics : 10 Marks

A- Welding

B- Refrigeration

2- Read the following passage then answer the questions below : 10 Marks

Heat treatment is the process of heating and cooling metals to achieve desired physical and mechanical properties through modification of their crystalline structure. The temperature, length of time, and rate of cooling after heat treatment will all impact properties dramatically. The most common reason to heat treatment include increasing strength or hardness, increase toughness, improving ductility, and maximizing corrosion resistance. The most common heat treatment processes are Annealing, Quench hardening, and Tempering.

Questions:

- 1- What is heat treatment process?
- 2- The --(1)-- , --(2)-- , --(3)-- after heat treatment will all impact properties.
- 3- What is the reason for using heat treatment ?
- 4- Mention the most common heat treatment processes?
- 5- Heat treatment is the process of only heating metals. ( True ✓ or False X )
- 3- Do as shown between brackets. Choose only FIVE: 10 Marks
  - 1- The Refrigerator was difficult to repair ( begin with It )
  - 2- Mention the technical report sections ( Answer )
  - 3- The Arc welding belongs to solid - state welding ( correct the underlined word )
  - 4- The split air- conditioners comprise of two units ---1--- unit, and ---2--- unit. (complete)
  - 5- Yes, he was repairing the machine. ( Make a question )
  - 6- This machine is ( good - better - best ) than your machine. ( choose )
  - 7- What is the process of metal working ? ( Answer )
  - 8- Window air conditioners are only below 18000 BTUs ( True ✓ or False X )
- 4- Translation 10 Marks

A-Translate into Arabic

Metal working is a science, art, hobby, industry, and trade. It can be divided into the following categories; forming, cutting, and joining.

B-Translate into English

تكييف الهواء هو عبارة عن عملية يتم من خلالها التحكم في درجات الحرارة والرطوبة وكفاءة توزيع الهواء.

Best Wishes



I. Write 5 sentences in only one of the following:

(10 Marks)

1. Alloys

2. Welding.

II. Read the following passage, and then answer the questions.

(10 Marks)

The vaporized refrigerant carries the heat to an outdoor compressor, which compresses the refrigerant vapor raising its temperature higher than the outdoor air temperature. A fan blows relatively cool outdoor air across condenser coils, through which the hot refrigerant flows, causing the refrigerant to liquefy as it gives up heat to the outdoor air. The high-pressure liquid refrigerant then passes through an expansion valve, reducing its temperature and pressure.

Questions:

1. What is the function of the compressor?
2. How is the cooled air circulated indoors?
3. Why is the expansion valve used?
4. Mention the kinds of refrigerant used in refrigeration cycles.
5. An open loop refrigeration cycle is used in air conditioners to cool indoor spaces (correct)

III. General Questions:

Do as shown between brackets. Answer ONLY 5 :

(10 Marks)

1. Please, Give me .....hammer and .....nails (Complete)
2. He is repairing the machines (Passive)
3. Ammonia refrigeration is dangerous to use (Begin with It)
4. The title of the technical report should indicate ..... (complete)
5. is - metals - a fabrication - together - Welding - that joins - process: (rearrange)
6. What are the main important components of a technical report?
7. Freon gas is harmful to human beings. (Correct)
8. .... is a process that reshapes a metal. (complete)
9. soft- cold- easy- wide- low (opposites)

IV. Translate the following

(10 Marks)

1. Melting point is the temperature at which a solid changes to liquid, Most alloys do not have a single melting point they have a melting range in which the alloy is a mixture of solid and liquid stages

2. ينقسم عمليات اللحام إلى مجموعتين رئيسيتين: اللحام بالصور واللحام في الحالة

Good Luck & Best Wishes