



**Qassim University  
Deanship of Educational Services  
English Language Unit**

<b>NAME</b>			<b>الاسم</b>
<b>UNIVERSITY NUMBER</b>			<b>الرقم الجامعي</b>
<b>GROUP NUMBER</b>			<b>رقم الشعبة</b>
<b>INVIGILATOR'S SIGN</b>			

**(ESP102) Level Four (New System)  
ESP (Engineering)**

**SECOND SEMESTER (1435 -1436 H /2014-2015)**

**Final Exam**

**Version 1**

<b>No. of Questions</b>	<b>60</b>
<b>Duration of the Exam</b>	<b>Two Hours</b>

**I. Choose the best word to complete each of the following sentences.**

**25 marks @ 1 mark each**

1. **Because American houses are built of wood, they require a lot of \_\_\_\_\_.**  
 a. concrete                      b. timber                      c. gold                      d. highways
2. **When metal is shaped by hammering we say it is \_\_\_\_\_.**  
 a. injured                      b. molded                      c. wrought                      d. wrung
3. **Repeated stresses can cause \_\_\_\_\_ in metal.**  
 a. fatigue                      b. strength                      c. corrosion                      d. expansion
4. **A/An \_\_\_\_\_ metal like gold is one that is very valuable.**  
 a. precious                      b. ferrous                      c. alloy                      d. inexpensive
5. **Let's not take the stairs. Let's use the \_\_\_\_\_ to go upstairs.**  
 a. pulley                      b. car                      c. airplane                      d. elevator
6. **Every building must have \_\_\_\_\_ to support the weight of the structure.**  
 a. concrete                      b. ceilings                      c. masonry                      d. bearing walls
7. **A \_\_\_\_\_ fault is one that causes harm or injury to some people.**  
 a. minor                      b. unimportant                      c. critical                      d. command
8. **\_\_\_\_\_ metals are resistant to high temperatures.**  
 a. Metallic                      b. Refined                      c. Precious                      d. Refractory
9. **Most large airports have both domestic and international \_\_\_\_\_ where passengers board planes.**  
 a. runways                      b. terminals                      c. stations                      d. highways
10. **When planning a highway, planning the \_\_\_\_\_ is very important to make sure water gets off of the road when it rains.**  
 a. drought                      b. sidewalks                      c. asphalt                      d. drainage
11. **\_\_\_\_\_ systems do not cause harm even when they fail.**  
 a. Fail-safe                      b. Catastrophic fault                      c. Primary                      d. Risk-adverse
12. **If you invent something, you should \_\_\_\_\_ it so that only you can profit from it.**  
 a. create                      b. buy                      c. patent                      d. practice
13. **A machine will continue to operate even with faults when it is \_\_\_\_\_.**  
 a. risk-adverse                      b. catastrophic                      c. inherent                      d. fault-tolerant
14. **To go from one side of a river to another, we can build a bridge over it or a \_\_\_\_\_ under it.**  
 a. boat                      b. tunnel                      c. wire                      d. runway
15. **There are many diamond \_\_\_\_\_ in South Africa.**  
 a. fields                      b. rocks                      c. wells                      d. deposits
16. **Oil is exported from Saudi Arabia on \_\_\_\_\_.**  
 a. tankers                      b. camels                      c. cruise ships                      d. pipelines

17. The student took physics three times, and finally his \_\_\_\_\_ succeeded. He passed the final.  
 a. failure                      b. surrender                      c. attempts                      d. abutment
18. A technology nobody uses anymore is \_\_\_\_\_.  
 a. modern                      b. current                      c. obsolete                      d. obese
19. Concrete \_\_\_\_\_ as it dries.  
 a. cracks                      b. weakens                      c. softens                      d. hardens
20. Trains and airplanes are used to move \_\_\_\_\_, goods and merchandise, as well as people.  
 a. freight                      b. drainage                      c. runways                      d. corrosion
21. Engineers are always looking for ways to make machines more \_\_\_\_\_, to run better.  
 a. obsolete                      b. efficient                      c. kinetic                      d. flammable
22. As smoke rises in the atmosphere, it \_\_\_\_\_ and disappears.  
 a. strengthens                      b. poisons                      c. envelopes                      d. dissipates
23. Before building a tall building, the builders must \_\_\_\_\_ the soil so they can build a deep foundation.  
 a. erect                      b. excavate                      c. evaporate                      d. fill
24. Steel is an example of \_\_\_\_\_, a material that contains iron.  
 a. a refractory metal                      b. a precious metal                      c. a ferrous metal                      d. conductivity
25. \_\_\_\_\_ is the amount of space something takes up.  
 a. Weight                      b. Height                      c. Deadweight                      d. Volume

**II. Choose the word that means the OPPOSITE of the underlined word.**

**5 Marks@ 1 Mark each**

26. The substructure is the part of a building or bridge that is below ground level.  
 a. basement                      b. infrastructure                      c. subsoil                      d. superstructure
27. The span of a bridge is a horizontal surface.  
 a. strong                      b. vertical                      c. spherical                      d. cylindrical
28. Gasoline is flammable.  
 a. dangerous                      b. combustible                      c. explosive                      d. noncombustible
29. When building with concrete, we must leave room for expansion in hot and humid weather.  
 a. contraction                      b. cracking                      c. corrosion                      d. growth
30. A mixture of many different ingredients is a heterogeneous mixture.  
 a. homogeneous                      b. genius                      c. liquefied                      d. inflammable

**III. Choose the word that means the same as the underlined word.**

**10 Marks@ 1 Mark each**

31. Walls are built to resist pressures such as weight and wind.  
 a. descend                      b. withstand                      c. increase                      d. require

32. The brakes failed because they had a defect.  
 a. fault                      b. clutch                      c. defense                      d. contour
33. Ancient scientists used to look for ways to convert other metals to gold.  
 a. challenge                      b. compete                      c. change                      d. concentrate
34. Engineering has many specialized branches, such as civil engineering and electrical engineering.  
 a. studies                      b. leaves                      c. eras                      d. fields
35. After a dust storm, everything is coated with dust and dirt.  
 a. cleaned                      b. covered                      c. cleansed                      d. converted
36. There is a lot of building occurring in Riyadh these days.  
 a. construction                      b. traffic                      c. pollution                      d. noise
37. Wood is often used in building because of its rigidity.  
 a. weakness                      b. stiffness                      c. flexibility                      d. cheapness
38. \_\_\_\_\_ concrete is stronger than regular concrete because steel bars are inside of it.  
 a. Muscular                      b. Reinforced                      c. Soft                      d. Smooth
39. Lubricants reduce friction.  
 a. eliminate                      b. signify                      c. decrease                      d. carry
40. There are many features to a well-designed airport.  
 a. aspects                      b. assessments                      c. plans                      d. revisions

**IV. Read the following passage and answer the questions that follow.**

**10 Marks@ 1 Mark each**

**Highway engineering** is an engineering discipline branching from civil engineering that involves the planning, design, construction, operation, and maintenance of roads, bridges, and tunnels to ensure safe and effective transportation of people and goods. The beginning of road construction could be dated to the time of the Romans. With the advancement of technology from carriages pulled by two horses to modern motor vehicles, road development had to advance. The construction of modern highways did not begin until the late 19th to early 20th century.

The most appropriate location, alignment, and shape of a highway are selected during the design stage. Highway design involves the consideration of three major factors (human, vehicular, and roadway) and how these factors interact to provide a safe highway.

The first research dedicated to highway engineering was initiated in the United Kingdom in 1930 and has continued until today in many countries. With constant stress from vehicles which grew larger as time passed, improvements to pavement were needed. Today, there are two major types of pavement surfaces – flexible and rigid. Underneath the road built of either type of pavement are material layers such as gravel that give structural support for the pavement system.

A flexible pavement's surface layer is usually constructed of asphalt. The term "flexible" is used because of the asphalt's ability to bend and deform slightly, then return to its original position as each traffic load is applied and removed. It is possible for these small deformations to become permanent over an extended time. The service life of a flexible pavement is typically designed in the range of 15 to 20 years.

Concrete is the most common material used in the construction of rigid pavement slabs. The reason for its popularity is due to its availability and cost. Rigid pavements must be designed to endure frequently repeated traffic

loadings. Rigid pavements are generally used in constructing major highways, such as between cities. The typical designed service life of a rigid pavement is between 30 and 40 years, lasting about twice as long as a flexible pavement.

41. Highway engineering does not involve the construction or maintenance of \_\_\_\_\_.
- a. tunnels                      b. roads                      c. airports                      d. bridges
42. Highway engineering is a branch of \_\_\_\_\_ engineering.
- a. electrical                      b. mechanical                      c. aerospace                      d. civil
43. Road construction began with the \_\_\_\_\_.
- a. Romans                      b. Chinese                      c. Egyptians                      d. Greeks
44. Road development had to occur because of the creation of \_\_\_\_\_.
- a. horse carriages                      b. airplanes                      c. automobiles                      d. cities
45. The first research dedicated to highway engineering was in \_\_\_\_\_.
- a. Great Britain                      b. the U.S.                      c. Germany                      d. Japan
46. \_\_\_\_\_ factors are not a consideration in highway engineering and construction.
- a. Human                      b. Roadway                      c. Communication                      d. Vehicular
47. The most commonly used material for flexible pavement is \_\_\_\_\_.
- a. concrete                      b. gravel                      c. asphalt                      d. rubber
48. Flexible pavements \_\_\_\_\_.
- a. bend slightly as vehicles drive over them                      b. are built directly upon the dirt  
c. are best for major highways between cities                      d. all of the answers
49. The most commonly used material for rigid pavement is \_\_\_\_\_.
- a. concrete                      b. salt                      c. asphalt                      d. metal
50. Flexible pavement lasts \_\_\_\_\_ than rigid pavement.
- a. as long as                      b. fewer years                      c. longer                      d. many more years

**V. Read the following passage and answer the questions that follow.**

**10 Marks@ 1 Mark each**

An alloy is a mixture of either pure or fairly pure chemical elements, which forms an impure substance (admixture) that retains the characteristics of a metal. An alloy is distinct from an impure metal, such as wrought iron, in that, with an alloy, the added impurities are usually desirable and will typically have some useful benefit. Alloys are made by mixing two or more elements; at least one must be a metal. This is usually called the primary metal or the base metal, and the name of this metal may also be the name of the alloy. The other constituents may or may not be metals but, when mixed with the liquified base, they will be soluble, dissolving into the mixture.

When the alloy cools and solidifies (crystallizes), its mechanical properties will often be quite different from those of its individual constituents. A metal that is normally very soft and easily shaped and bent, such as aluminum, can be altered by alloying it with another soft metal, like copper. Although both metals are very soft and ductile, the

resulting aluminum alloy will be much harder and stronger. Adding a small amount of non-metallic carbon to iron produces an alloy called steel. Due to its very high strength and toughness (which is much higher than pure iron), and its ability to be greatly altered by heat treatment, steel is one of the most common alloys in modern use. By adding chromium to steel, its resistance to corrosion can be enhanced, creating stainless steel. The term pewter covers a variety of alloys consisting primarily of tin. As a pure metal, tin is much too soft to be used for any practical purpose. However, in the ancient world, tin was a rare metal and, in many parts of Europe and the Mediterranean, was often valued higher than gold. To make jewelry, forks and spoons, or other objects from tin, it was usually alloyed with other metals to increase its strength and hardness. These metals were also used to strengthen each other, for more practical purposes. Copper was often added to silver to make sterling silver, increasing its strength for use in dishes, silverware, and other practical items. Alloys have brought many benefits to mankind.

- 51. An alloy consists of \_\_\_\_\_ material(s).**  
 a. one                                      b. two or more                                      c. only metal                                      d. steel
- 52. An alloy \_\_\_\_\_ .**  
 a. has the same characteristics as its ingredients                                      b. is bad because it is an impure material  
 c. has benefits which the materials in it do not have alone                                      d. none of the other answers
- 53. To make an alloy, the material must be in a \_\_\_\_\_ state.**  
 a. liquid                                      b. solid                                      c. crystalized                                      d. gaseous
- 54. Aluminium in its natural state is very \_\_\_\_\_ .**  
 a. brittle                                      b. soft                                      c. inflexible                                      d. all of the answers
- 55. Steel consists of \_\_\_\_\_ elements.**  
 a. one                                      b. two                                      c. three                                      d. unlimited
- 56. Carbon is \_\_\_\_\_ .**  
 a. a metal                                      b. not a metal                                      c. found in pure iron                                      d. useless with iron
- 57. Stainless steel is regular steel with \_\_\_\_\_ added.**  
 a. titanium                                      b. silver                                      c. chromium                                      d. nothing
- 58. Tin is a(n) \_\_\_\_\_ .**  
 a. carbon                                      b. alloy                                      c. metal                                      d. product made of metal
- 59. People made alloys with tin \_\_\_\_\_ .**  
 a. to increase its hardness                                      b. because it was very expensive  
 c. to make pewter                                      d. all other answers
- 60. Sterling silver is \_\_\_\_\_ .**  
 a. pure                                      b. an alloy of copper and silver                                      c. softer than regular silver                                      d. none of the answers