**سوالات فصل دوم کتاب دگارمو**

ترتیب پاسخگویی به سوالات: هر دانشجو باید به سه سوال، به­شرح مندرج در جدول زیر پاسخ دهند:

|  |  |  |
| --- | --- | --- |
| **شماره فولدر** | **نام و نام خانوادگي** | **شماره سوال** |
| 1 | امیری­علی بلاغی- محمد | 1 و 9 و 17 |
| 2 | ایمانی- محمد حسین | 2 و 10 و 18 |
| 3 | برزگر- رضا | 3 و 11 و 19 |
| 4 | پورمحمد- فاطمه | 4 و 12 و 20 |
| 5 | رضایی پورالماسی- خشایار | 5 و 13 و 21 |
| 6 | کربلایی اسدی فرشبافی- مجتبی | 6 و 14 و 22 |
| 7 | نبردآور- علی | 7 و 15 و 23 |
| 8 | سلطانعلی­نژاد- روزبه | 8 و 16 و 24 |

1. Why might the various types of hardness tests fail to agree with one another?
2. What is the relationship between penetration hardness and the ultimate tensile strength for steel?
3. Describe several types of dynamic loading.
4. Why should the results of standardized dynamic tests be applied with considerable caution?
5. What are the two most common types of bending and impact tests? How are the specimens supported and loaded in each?
6. What aspects or features can significantly alter impact data?
7. What is “notch-sensitivity” and how might it be important in the performance of a product?
8. What is the endurance limit? What occurs when stresses are above it? Below it?
9. Are the stresses applied during a fatigue test above or below the yield strength (as determined in a tensile test)?
10. What features may significantly alter the fatigue lifetime or fatigue behavior of a material?
11. What relationship can be used to estimate the endurance limit of a steel?
12. What material, design, or manufacturing features can contribute to the initiation of a fatigue crack?
13. What are fatigue striations and why do they form?
14. Why is it important for a designer or engineer to know a material’s properties at all possible temperatures of operation?
15. Why should one use caution when using steel at low temperature?
16. How might we evaluate the long-term effect of elevated temperature on an engineering material?
17. What is a stress–rupture diagram, and how is one developed?
18. Why are terms such as *machinability, formability,* and *weldability* considered to be poorly defined and therefore quite nebulous?
19. What is the basic premise of the fracture mechanics approach to testing and design?
20. What three principal quantities does fracture mechanics attempt to relate?
21. What are the three most common thermal properties of a material, and what do they measure?
22. Describe an engineering application where the density of the selected material would be an important material consideration.
23. Why is it important that property testing be performed in a standardized and reproducible manner?
24. Why is it important to consider the orientation of a test specimen with respect to the overall piece of material?