

کد کنترل

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## آزمون (نیمه متمرکز) ورود به دوره های دکتری - سال ۱۴۰۱

دفترچه شماره (۲)

صبح جمعه ۱۴۰۰/۱۲/۶



«اگر دانشگاه اصلاح شود، مملکت اصلاح می شود.»  
امام خمینی (ره)

جمهوری اسلامی ایران  
وزارت علوم، تحقیقات و فناوری  
سازمان سنجش آموزش کشور

### کلیه رشته های امتحانی گروه آزمایشی علوم پایه

جدول مواد امتحانی، تعداد، شماره سؤال ها و زمان پاسخگویی

ردیف	مواد امتحانی	تعداد سؤال	از شماره	تا شماره	زمان پاسخگویی
۱	استعداد تحصیلی	۳۰	۱۰۱	۱۳۰	۹۰ دقیقه
۲	زبان انگلیسی - عمومی	۳۰	۱۳۱	۱۶۰	

استفاده از ماشین حساب مجاز نیست.

این آزمون نمره منفی دارد.

حق چاپ، تکثیر و انتشار سؤالات به هر روش (الکترونیکی و ...) پس از برگزاری آزمون، برای تمامی اشخاص حقیقی و حقوقی تنها با مجوز این سازمان مجاز می باشد و با متخلفین برابر مقررات رفتار می شود.

جهت تهیه بسته کامل سؤالات استخدامی درس زبان انگلیسی، **اینجا** کلیک نمایید.



- 138- The reason that the building industry declined was ..... on loans was so high.
- 1) the interest rate  
2) that the interest rate  
3) the interest rate that  
4) because of the interest rate
- 139- Aspirin, ..... common name for acetylsalicylic acid, is widely used like a drug for alleviating pain.
- 1) that is  
2) whose  
3) the  
4) being
- 140- Being ingrained in many challenges and innovations across many fields ..... a mechanical engineering education is versatile.
- 1) means  
2) which mean  
3) meaning  
4) so that it means

## PART B: Vocabulary

**Directions:** Select the answer choice (1), (2), (3), or (4) that best completes the blank. Then mark the correct choice on your answer sheet.

- 141- We will have to repeat the experiment because the results were not .....  
1) equivocal 2) credulous  
3) conclusive 4) spontaneous
- 142- The doctor's medical license was ..... after it was discovered that, out of sheer cupidity, he had diagnosed people with illnesses they didn't have and pocketed insurance money for performing procedures they didn't need.  
1) overlooked 2) revoked  
3) diminished 4) belittled
- 143- When she didn't receive the job, she asked the company for ..... feedback to help her with future employment.  
1) unexceptional 2) foreseeable  
3) hierarchical 4) constructive
- 144- Although I tried to pay you a compliment, you have unfortunately decided to ..... my words as an insult.  
1) adopt 2) construe  
3) contribute 4) qualify
- 145- The twins began school ....., but they did not graduate at the same time.  
1) simultaneously 2) interchangeably  
3) symmetrically 4) chronologically
- 146- Though we are in ..... on what our goals should be, we differ on the means for achieving them.  
1) monotony 2) accord  
3) homogeneity 4) jeopardy
- 147- The debate is becoming polarized and there appears to be little in the way of ..... ground between the two sides.  
1) similar 2) clear  
3) slippery 4) middle

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148- The main dish had little flavor, but I made it more ..... by adding condiments.

1) affordable

2) unrecognizable

3) palatable

4) memorable

149- In our ..... to leave for our camping trip we'd long been looking forward to, we actually forgot to bring our tent.

1) haste

2) scheme

3) apathy

4) collaboration

150- Any dispute over finances is likely to sour the relationship to the ..... of both parties.

1) intensity

2) detriment

3) barrier

4) isolation

### PART C: Reading Comprehension

Directions: Read the following two passages and select the choice (1), (2), (3), or (4) that best answers each question. Then mark the correct choice on your answer sheet.

#### Passage 1:

In a country where government and families alike are tightening their belts and trying to make do with less, you could be pardoned for thinking that private education would be in a bit of a jam right now. And yet, although fees at independent schools in Britain have approximately doubled over the last two and a half decades, pupil numbers are the highest since records started in 1974. Although there are numerous reasons why parents might choose to fork out an average of £12,500 per year on their child's education, there is one which stands out more than any other: their reputation for getting their students into elite universities, such as the Ivy League colleges and Britain's most prestigious universities: Oxford and Cambridge.

Private schools with experience in these admissions processes run like well-oiled machines. Their informed careers advisers have in-depth tactical knowledge of which colleges would best suit each candidate, and help them to edit their personal statements to reflect the qualities that elite universities are looking for. Interview training sessions guide young applicants through an interview system which has been described as being 'more reminiscent of an old-boy network than justice for society'. Those with family members and teachers who have successfully gone through the admissions process are at a considerable advantage to those who are the first to apply among their social group.

Consequently, the social mix of students at the top universities remains sadly biased towards the rich and privately educated—although thanks to increasing numbers of bursaries providing free private school education to academically gifted youngsters, it is possible to be one without the other. Even so, the fact is that 7% of British children go to private schools, while more than 40% of the intake at Oxford and Cambridge is privately educated, and this statistic depicts a worryingly skewed trend. The proportion matters because, although there are obviously plenty of other universities offering excellent study programs, an Oxbridge or Ivy-League degree undoubtedly enhances employability in the ruling professions. According to recent studies by the UK educational charity "The Sutton Trust", over 30% of leading professionals in the United Kingdom, including almost 80% of

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lawyers, 47% of highflyers in financial services and 41% of top journalists attended Oxford or Cambridge.

151- What is the best title for the passage?

- |                                       |                                     |
|---------------------------------------|-------------------------------------|
| 1) Unfair Education in Britain        | 2) Moribund Education Standards     |
| 3) Social Class Immobility in Britain | 4) Fewer Opportunities for Everyone |

152- What is the phrase “in a bit of a jam” in paragraph 1 closest in meaning to?

- |                             |                        |
|-----------------------------|------------------------|
| 1) overwhelmed with demand  | 2) under severe attack |
| 3) in a difficult situation | 4) on its last legs    |

153- According to the passage, the most important reason why parents in Britain choose to send their children to expensive independent schools is .....

- 1) because of such schools’ flexibility in adjusting their curricula to the changing demands of the job market
- 2) that elite universities’ admissions policies are intentionally skewed towards students from wealthy backgrounds
- 3) that this way their children’s future career opportunities could be somehow guaranteed
- 4) because of such schools’ reputation for having influence over prestigious universities

154- The word “one” in paragraph 3 refers to .....

- |                   |                      |
|-------------------|----------------------|
| 1) private school | 2) gifted youngsters |
| 3) bursary        | 4) top university    |

155- Why has the author mentioned the statistics reported by “The Sutton Trust”?

- 1) To further support the quality of the education offered by elite universities
- 2) To introduce another reason for the popularity of private schools
- 3) To clarify the link between tertiary education and employability
- 4) To support an earlier assertion

#### Passage 2:

The James Webb Space Telescope has an expected mass about half of Hubble Space Telescope’s, but its primary mirror, a 6.5 m (21 ft) diameter gold-coated beryllium reflector will have a collecting area over six times as large, 25.4 m<sup>2</sup> (273 sq ft), using 18 hexagonal mirrors with 0.9 m<sup>2</sup> (9.7 sq ft) obscuration for the secondary support struts.

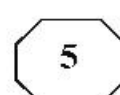
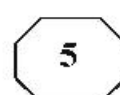
JWST is designed primarily for near-infrared astronomy, but can also see orange and red visible light, as well as the mid-infrared region, depending on the instrument. The design emphasizes the near to mid-infrared for three main reasons: first, high-redshift objects have their visible emissions shifted into the infrared, second, cold objects such as debris disks and planets emit most strongly in the infrared, and finally, this band is difficult to study from the ground or by existing space telescopes such as Hubble.

Ground-based telescopes must look through Earth’s atmosphere, which is opaque in many infrared bands. Even where the atmosphere is transparent, many of the target chemical compounds, such as water, carbon dioxide, and methane, also exist in the Earth’s atmosphere, vastly complicating analysis. Existing space telescopes such as Hubble cannot study these bands since their mirrors are insufficiently cool – the Hubble mirror is

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maintained at about 15 °C (288 K; 59 °F) thus the telescope itself radiates strongly in the infrared bands.

JWST will operate near the Earth–Sun L2 (Lagrange point), approximately 1,500,000 km (930,000 mi) beyond Earth's orbit. By way of comparison, Hubble orbits 550 km (340 mi) above Earth's surface, and the Moon is roughly 400,000 km (250,000 mi) from Earth. This distance made post-launch repair or upgrade of JWST hardware virtually impossible with the spaceships available during the telescope design and fabrication stage. Objects near this Lagrange point can orbit the Sun in synchrony with the Earth, allowing the telescope to remain at a roughly constant distance and with constant orientation of the single heatshield and the Bus toward the Earth and the Sun to block heat and light from the Sun and Earth and maintain communications. This arrangement will keep the temperature of the spacecraft below 50 K (–223 °C; –370 °F), necessary for infrared observations.

**156- Which of the following best describes the organization of the passage?**

- 1) A phenomenon is mentioned and its features are delineated.
- 2) A phenomenon is identified and illustrations of this phenomenon offered.
- 3) A discovery is introduced and its implications for further research are discussed.
- 4) A physical description of a device is presented and the limitations of the device are briefly discussed.

**157- All of the following are true about JWST except that .....**

- 1) once placed where it should be, its repair, if ever needed, is almost out of the question
- 2) it will operate approximately 1,500,000 km (930,000 mi) beyond Earth's orbit
- 3) it is not primarily designed for the mid-infrared region
- 4) the area of its primary mirror is larger than 25.4 m<sup>2</sup>

**158- Which of the following rhetorical devices is NOT used in the passage?**

- 1) Cause and effect
- 2) Chronological time order
- 3) Contrast
- 4) Function description

**159- According to the passage, how many kilometers should objects approximately be beyond Earth's orbit to be able to orbit the Sun in synchrony with the Earth?**

- 1) 400,000
- 2) 550
- 3) 1,500,000
- 4) Between 550 and 400,000

**160- Which of the following best describes the attitude toward the subject of the passage?**

- 1) Scientific and detached
- 2) Tentative acceptance
- 3) Concerned but optimistic
- 4) Suspicious and cautious

This is the end of Section 5.