آزمون ورودی دوره‌های کارشناسی ارشد فناوری داخل سال ۱۳۸۸

مهمسازی کشاورزی - علوم باگبانی
(کد ۱۳۰۵)

شماره داوطلب: 
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تعداد سوال: ۱۸۰

عنوان‌های مواد امتحانی، تعداد و شماره سوالات

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به‌همه ماه سال ۱۳۸۷
استفاده از ماشین حساب مجاز نمی‌باشد.
PART A: Vocabulary

Directions: Choose the word or phrase (1), (2), (3), or (4) that best completes each sentence. Then mark the correct choice on your answer sheet.

1- The rise in unemployment was just a further ________ of the government’s incompetence.
   1) inclination  2) approximation  3) modification  4) manifestation

2- The country’s most valuable agricultural ________ include wheat and rice.
   1) revenues  2) attributes  3) proportions  4) commodities

3- These changes are a(an) ________ to wide-ranging reforms.
   1) prelude  2) allocation  3) schedule  4) implication

4- Honesty is a very attractive character ________.
   1) trait  2) prospect  3) conviction  4) outcome

5- The driver was found guilty on ________ the speed limit.
   1) pursuing  2) enhancing  3) exceeding  4) surpassing

6- The members of the committee will be ________ on October 25.
   1) restoring  2) locating  3) convening  4) accompanying

7- The region needs housing which is strong enough to ________ severe wind and storms.
   1) object  2) recline  3) diminish  4) withstand

8- Two decades ________ between the completion of the design and the operation of the dam.
   1) overlapped  2) intervened  3) transferred  4) overwhelmed

9- The ________ goal of this research is to gather data on the process of first language acquisition.
   1) principal  2) successive  3) continual  4) insightful

10- Flexibility is ________ to creative management.
    1) intrinsic  2) compatible  3) forthcoming  4) contemporary

PART B: Grammar

Directions: Read the following passage and decide which choice (1), (2), (3), or (4) best fits each space. Then mark the correct choice on your answer sheet.

The computer evolved from mechanical calculating machines that could do arithmetic by having cogs and levers that turned and moved ________ numbers. The first one was built by the French inventor Blaise Pascal in 1642. Pascal’s calculating machine was improved over the next 200 years, and in 1833 the British mathematician Charles Babbage designed a machine ________ be “programmed” to carry out different mathematical operations. This machine was called the Analytical Engine. It ________ to have the mechanical equivalent of the input, processing, memory, and output units found in today’s electronic computers.

Over a hundred years ________, in 1944, a mechanical computer, powered by electricity, was completed in the United States on Babbage’s principle. ________, in the previous year, the first electronic computer had been built in Britain. It was called Colossus and was used to crack enemy codes during World War II.

11- 1) representing  2) to represent  3) for representing  4) from representing

12- 1) which can  2) that could  3) where it can  4) where it could

13- 1) meant  2) was meant  3) had the meaning  4) was the meaning

14- 1) subsequent  2) next  3) later  4) following

15- 1) Since then  2) Therefore  3) However  4) Afterwards
 PART C. READING COMPREHENSION

DIRECTIONS: Read the following three passages and choose the best choice (1), (2), (3) or (4). Then mark it on your answer sheet.

PASSAGE 1:

Plants form new tissue in an area called the meristem, located near the tips of roots and shoots, where active cell division takes place. Meristem growth is aimed at ensuring that leaves are quickly elevated into sunlight, and that roots are able to penetrate deeply into the soil. Once adequate height and length is achieved by the stems and roots, they will begin to thicken to give support to the plant. On the shoots, these growing tips of the plant are known as apical buds. The apical meristem (or tip) produces the growth hormone auxin, which not only promotes cell division, but also diffuses downwards and inhibits the development of lateral bud growth which would otherwise compete with the apical tip for light and nutrients. Removing the apical tip and its suppressive hormone allows the lower dormant lateral buds to develop, and the buds between the leaf stalk and stem produce new shoots which compete to become the lead growth. Manipulating this natural response to damage (known as the principle of apical dominance) by processes such as pruning (as well as coppicing and pollarding) allows the horticulturist to determine the shape, size and productivity of many fruiting trees and bushes. The main aim when pruning fruit trees is usually to obtain a decent crop of fruit rather than a tree with an abundance of lush yet unproductive foliage. Unpruned trees tend to produce large crops of small, worthless fruit often damaged by pests and diseases, and much of the crop is out of reach at the top of the tree. Branches can become broken by the weight of the crop, and the cropping may become biennial (that is, only bearing fruit every other year).

16- It is stated in the passage that ---------.  
   1) plants normally grow from their meristem  
   2) tree leaves are quickly elevated into sunlight  
   3) meristem enables roots to penetrate into the soil  
   4) active cell division takes place mostly near shoots  

17- The passage mentions that ---------.  
   1) the apical tip is a source of light and nutrients  
   2) apical buds may grow on roots as well as shoots  
   3) the downwards movement of bud cells is diffused  
   4) auxin limits the development of lateral bud growth  

18- The passage points to the fact that ---------.  
   1) bushes can affect the productivity of fruit trees  
   2) coppicing can partly control apical dominance  
   3) the leaf stalk and stem are produced by new shoots  
   4) pollarding is important only to the growth of bushes  

19- The passage mentions that if we do not prune a fruit tree, ---------.  
   1) much of the crop will be at the top of the tree  
   2) pests and diseases will damage the foliage  
   3) we usually obtain only a decent crop  
   4) biennial crops will bear fruit every year  

20- ‘Manipulating’ in the passage (underlined) is basically closest to a kind of ---------.  
   1) ‘benefit’  
   2) ‘control’  
   3) ‘growth’  
   4) ‘competition’
Citrus trees hybridise very readily - depending on the pollen source, plants grown from a Persian Lime's seeds can produce fruit similar to grapefruit. Thus all commercial citrus cultivation uses trees produced by grafting the desired fruiting cultivars onto rootstocks selected for disease resistance and hardiness. The colour of citrus fruits only develops in climates with a (diurnal) cool winter. In tropical regions with no winter, citrus fruits remain green until maturity, hence the tropical "green oranges". The Persian Lime in particular is extremely sensitive to cool conditions, thus it is usually never exposed to cool enough conditions to develop a mature colour. If they are left in a cool place over winter, the fruits will actually change to a yellow colour. Many citrus fruits are picked while still green, and ripened while in transit to supermarkets. Citrus trees are not generally frost hardy. Mandarin Oranges tend to be the hardest of the common Citrus species and can withstand short periods down to as cold as $-10 \, ^\circ \text{C}$, but realistically temperatures not falling below $-2 \, ^\circ \text{C}$ are required for successful cultivation. Tangerines, tangors and yuzu can be grown outside even in regions with more marked sub-zero degrees in winter, although this may affect fruit quality. A few hardy hybrids can withstand temperatures well below freezing, but do not produce quality fruit. Lemons can be commercially grown in cooler-summer/moderate-winter coastal Southern California, because sweetness is neither attained nor expected in retail lemon fruit. The related Trifoliate Orange can survive below $-20 \, ^\circ \text{C}$; its fruit are astringent and inedible unless cooked.

21- The passage mentions that
1) grafting results in the desired fruit cultivar
2) Persian Lime seeds can produce grapefruit
3) citrus rootstocks often have the desired hardiness
4) citrus fruits are usually picked before they are ripe

22- It is stated in the passage that
1) 'green oranges' do not become mature
2) citrus grows best in winters and cool climates
3) Mandarin oranges are a common citrus type
4) Persian Lime does not have a mature colour

23- The passage points to the fact that
1) some certain citrus fruit grow even at $-20\, ^\circ \text{C}$
2) freezing temperatures are not good for fruit
3) citrus should be cultivated at about $-2\, ^\circ \text{C}$
4) frosty conditions does not harden citrus trees

24- It might be understood from the passage that
1) it is expensive to grow good-quality citrus
2) hybrid citrus should be cooked to taste good
3) tangerines, tangors and yuzu are hybrid citrus species
4) the lemon fruit sold in supermarkets is not to be sweet

25- The word 'astringent' in the passage (underlined) is best related to the word
1) 'taste'
2) 'price'
3) 'shape'
4) 'size'

PASSAGE 3:

Following World War II a number of techniques were developed that allowed plant breeders to hybridize distinctly related species, and artificially induce genetic diversity. When distantly related species are crossed, plant breeders make use of a number of plant tissue culture techniques to produce progeny from otherwise fruitless mating. Interspecific and intergeneric hybrids are produced from a cross of related species or genera that do not normally sexually reproduce with each other. These crosses are referred to as Wide crosses. For example, the cereal triticale is a wheat and rye hybrid. The cells in the plants derived from the first generation created from the cross contained an uneven number of chromosomes and as result was sterile. The cell division inhibitor colchicine was used to double the number of chromosomes in the cell and thus allow the production of a fertile line. Failure to produce a hybrid may be due to pre- or post-fertilization incompatibility. If fertilization is possible between two species or genera, the hybrid embryo may abort before maturation. If this does occur the embryo resulting from an interspecific or intergeneric cross can sometimes be rescued and cultured to produce a whole plant. Such a method is referred to as Embryo Rescue. This technique has been used to produce new rice for Africa, an interspecific cross of Asian rice African rice.
26- It is stated in the passage that
1) genetic diversity is not possible without hybridisation
2) wide crosses do not sexually reproduce with each other
3) distantly related species should be artificially hybridized
4) plant hybridization was not possible before World War II

27- The passage mentions that
1) pre- or post-fertilisation produces incompatible hybrids
2) hybrid embryos would normally abort before maturation
3) a cross of related species can produce intergeneric hybrids
4) fruitless mating causes a cross of distantly related species

28- Which of the following is TRUE about the cereal triticale according to the passage?
1) It creates an uneven cross.
2) It derives from its first generation.
3) Its first generation could not reproduce.
4) Its colchicine is an effective inhibitor.

29- The passage points to the fact that
1) embryo rescue can save interspecific crosses
2) embryo rescue is mainly used for rice production
3) double chromosomes are the result of embryo rescue
4) we should not perform embryo rescue on whole plants

30- The word ‘this’ in the passage (underlined) refers to the concept of
1) ‘fertilisation’
2) ‘hybridisation’
3) ‘maturation’
4) ‘abortion’