**杨凌职业技术学院文理分院2018年教师招聘面试**

**英语教师岗位面试要求及资料**

Now you are planning to become a new teacher of our college, so you will be asked to give a 30-minute trial lecture at the interview. There are two parts you should finish.

**Part One**

**Here are three passages for you. Please choose one of them and then give a lecture about it with the help of courseware you make. (20 minutes)**

**Passage One**

**Thanksgiving Day**

|  |  |
| --- | --- |
| Thanksgiving is a common holiday celebrated in much of North America, generally regarded as an expression of thanks, usually to god. The most common view of its origin is that it was to give thanks to god for the bounty of the autumn harvest. In the United States, the holiday is celebrated on the fourth Thursday in November. In Canada, where the harvest generally ends earlier in the year, the holiday is celebrated on the second Monday in October. |  |

Thanksgiving Day is the most truly American of the national holidays in the United States and is most closely connected with the earliest history of the country. In 1620, the settlers, or Pilgrims, sailed to America on the Mayflower, seeking a place where they could have freedom of worship. After a two-month hard voyage they landed in Plymouth, Massachusetts. During their first winter, over half of the settlers died because of starvation or diseases. Those who survived began sowing in the first spring and hoped to have a good harvest in the autumn. Finally the fields produced a yield rich out of expectations. And therefore it was decided that a day of thanksgiving to the Lord should be fixed. Years later, President of the United States announced the fourth Thursday of November as Thanksgiving Day every year. The celebration of Thanksgiving Day has been followed on that date until today.

The pattern of the Thanksgiving celebration has never changed through the years. The big family dinner is planned months ahead. A variety of food is served at the dinner table, but the most important part of the celebration is the dinner which includes roast turkey and pumpkin pie. A lot of business goes on during this holiday. For example, restaurants take advantage of the holiday to sell turkey dinners.

Families and friends usually get together for a large meal during Thanksgiving and have a lot of fun. That’s why the Thanksgiving holiday weekend is considered one of the busiest travel periods of the year. Students are given a four-day or five-day weekend vacation. Thanksgiving is also a paid holiday for most workers.

Thanksgiving today is, in every sense, a national annual holiday on which Americans of all faiths and backgrounds join in to express their thanks for the year’ s bounty and reverently ask for continued blessings.

**Passage Two**

**An Hour of Your Time**

A man came home from work late, tired and irritated, to find his 5-year old son waiting for him at the door.

SON: “Daddy, may I ask you a question?”

DAD: “Yeah sure, what is it?” replied the man.

SON: “Daddy, how much do you make an hour?”

DAD: “That’s none of your business. Why do you ask such a thing?” the man said angrily.

SON: “I just want to know. Please tell me, how much do you make an hour?”

DAD: “If you must know, I make $ 20 an hour.”

“Oh”, the little boy replied, with his head looking up and down, he said, “Daddy, may I please borrow $10?”

The father was angrily, “If the only reason you asked that is so you can borrow some money to buy a silly toy or some other nonsense, then you march yourself straight to your room and go to bed. Think about why you are being so selfish. I work hard every day for such childish behavior.”

The little boy quietly went to his room and shut the door. The man sat down and started to get even angrier about the little boy’s questions. How dare he ask such questions only to get some money?

After about an hour or so, the man had calmed down, and started to think: Maybe there was something he really needed to buy with that $ 10 and he really didn’t ask for money very often.

The man went to the door of the little boy’s room and opened the door. “Are you asleep, son?” He asked. “No daddy, I’m awake,” replied the boy.

“I’ve been thinking, maybe I was too hard on you earlier,” said the man. “It’s been a long day and I took out my aggravation on you. Here’s the $ 10 you asked for.” The little boy sat straight up, smiling. “Oh, thank you, daddy!” He yelled. Then, reaching under his pillow, he pulled out some crumpled-up bills.

The man, seeing that the boy already had money, started to get angry again. His little boy slowly counted out his money, and then looked up at his father. “Why do you want more money if you already have some?” the father grumbled. “Because I didn’t have enough, but now I do,” the little boy replied. “Daddy, I have $ 20 now. Can I buy an hour of your time? Please come home early tomorrow. I would like to have dinner with you.”

So what is the moral of the story? Don’t work too hard… and you know what’s the full word of FAMILY?

FAMILY = ( F )ATHER ( A )ND ( M )OTHER ( I ) ( L )OVE ( Y )OU!

**Passage Three**

**Late at Night, Do You Turn Off Your Smart Phone?**

Today, my friend asked me a question. At night, do you turn off your smart phone? If you don’t, whom do you leave it on for?

I usually do not turn off my smart phone. Why? I have no idea. After reading an article, I seemed to understand a little bit: for that little bit of caring. I am now sharing this story with you.

The girl would turn her smart phone off and put it by her photo on the desk every night before going to bed. This habit has been with her ever since she bought the phone. The girl had a very close boyfriend. When they couldn’t meet, they would either call or send messages to each other. They both liked this type of communication.

One night, the boy really missed the girl. When he called her, however, the girl’s smart phone was off because she was already asleep. The next day, the boy asked the girl to leave her smart phone on at night because when he needed to find her and could not, he would be worried.

From that day forth, the girl began a new habit. Her cell phone never shut down at night. Because she was afraid that she might not be able to hear the phone ring in her sleep, she tried to stay very alert. As days passed, she became thinner and thinner. Slowly, a gap began to form between them.

The girl wanted to revive their relationship. On one night, she called the boy. However, what she got was a sweet female voice: “Sorry, the subscriber you dialed is power off.” The girl knew that her love has just been turned off.

After a long time, the girl has a new love. No matter how well they got along, the girl however refused to get married. In the girl’s heart, she always remembered that boy’s words and the night when that phone was power off. The girl still keeps the habit of leaving her cell phone on all throughout the night, but not expecting that it’ll ring.

One night, the girl caught ill. In moment of fluster, instead of calling her parents, she dialed the new boy’s smart phone. The boy was already asleep, but his cell phone was still on.

Later, the girl asked the boy: “Why don’t you turn your cell phone off at night?”

The boy answered: “I’m afraid that if you need anything at night and aren’t able to find me, you’ll worry.” The girl finally married the boy.

Late at night, do you turn off your smart phone?

**Part Two**

In this part, you will be given two tasks in order to test your comprehensive ability in using English. (10 minutes)

**（第二部分具体内容抽签前提供）**

**杨凌职业技术学院文理分院2018年教师招聘面试**

**数学教师岗位面试要求及资料**

1、试讲：（20-25）

从提供的三个知识点讲义中任选其一，制作PPT，讲解20-25分钟，要求有理论、有例题。（讲义附后）

2、综合能力考查

根据现场提供的资料，建立简单的数学模型，并进行5分钟左右的讲解，并接受评委询问。

（第二部分资料现场抽取）

**讲义一 第二 章 导数与微分**

**2.1 导数的概念**

**目的与要求:** 1.理解导数概念及其几何、物理意义；

2.掌握利用导数定义求简单函数极限的方法；

3.理解可导与连续间的关系.

**重点与难点:** 导数概念的理解.

**教学过程: 2.1.1 实例分析**

1. **变速直线运动的速度.**

例1. 已知物体作自由落体运动,运动方程为 ,求其在任意时刻t0的瞬时速度 v0.

解: 给时间t在t0时刻以微小增量,则有从t0时刻到时刻这一段时间内的路程增量为 

因而平均速度为

，令 ,

可得瞬时速度

.

一般的,设变速直线运动方程为:, 则其在任意时刻t0的瞬时速度 :

v0 = 

1. **切线的斜率**

例2. 已知曲线上任意一点M0的坐标为, 求其在M0点处切线的斜率.

解: 如图, 给自变量x在点x0处以微小增量,连接M0N,则割线M0N的斜率为

,

显然,当动点N沿曲线无限接近于M0时,割线的倾斜角无限接近于切线M0T的倾斜角,

则割线M0N斜率的极限 就是曲线在M0点处的斜率. 即有



上述两个问题,虽然意义不同,但从抽象的数量关系看,都可归结为: 函数增量与自变量增量的比值,当自变量增量趋向于0时的极限. 于是可引出导数的定义.

* + 1. **导数的概念**

定义2.1 设函数在点的某个邻域内有定义, 当自变量在处取得增量时,函数亦取得相应的增量



如果当 时,



存在，则称此极限值为函数在点的导数. 记作:

 , 或 , 或 .

并称函数在点可导; 否则,称函数在点不可导.

例3求函数在处的导数.

解给自变量在处以增量,则函数相应的增量为



,

于是

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故有

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即

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**讲义二 第五章 定积分**

**5.1 定积分的概念**

**目的与要求：**1 理解定积分的概念 ；

**重点与难点:** 定积分概念的理解.

**教学过程: 5.1.1 引例**

**引例1** **曲边梯形的面积**

例1 求由连续曲线,直线和轴围成的曲边梯形面积.

解: ⑴分割:用共个分点任意分割曲间,设各子区间为 ,各子区间的长度为 , ,过各分点分别作轴的垂线,则将曲边梯形分成个小的曲边梯形.

⑵近似替代:在各子区间上任取一点,,以为高,为底作小矩形,则有,各小曲边梯形的面积近似的表示为

 , 



图5-3

⑶求和: 曲边梯形的面积近似的表示为

 .

⑷取极限:记,表示各子区间中长度的

最大值,当,且时,曲边梯形的面积即为

** .**

**引例2** **变速直线运动的路程增量**

例2 已知物体做变速直线运动，任意时刻的速度为，求物体在时间区间上经过的路程增量（**可根据试讲时间选择例2**）

**5.1.2 定积分的概念**

定义:设函数在区间上有定义,若当时,积分和 的极限存在,且极限值与的划分,点的选取无关,则称函数在区间上可积,并将此极限值称为函数在曲间上的**定积分**. 记作, 于是



其中称为被积函数, 称为积分区间,为积分下限,为积分上限,称为积分变量,称为被积表达式.

于是,曲边梯形的面积就是函数在区间上的定积分,即 

对于定积分的概念,应注意以下几点:

⑴ 函数在区间上的定积分是积分和的极限,若这一极限存在,则它是一个确定的常数,只于被积函数和区间有关,而与积分变量符号、积分区间的任意分割、以及点的选取无关.

⑵ 在定积分的定义中，总是假设,若,则规定



即互换定积分的上、下限,积分符号改变.

⑶ 若,则规定: 

⑷ 可以证明:如果函数在区间上可积,则在区间上有界,即函数在区间上有界是其可积的必要条件.

**讲义三 4.4 微分方程基本概念和变量分离法**

**目的与要求:** 1.了解常微分方程有关概念；

2.掌握可分离变量微分方程的解法；

**重点与难点:** 微分方程的解法.

**教学过程:** **4.4.1 常微分方程的概念**

引例 已知某曲线经过点，且曲线上每一点处的切线斜率等于该点横坐标的倒数，求该曲线的方程.

解 设所求曲线的方程为，则由导数的几何意义可得

，

根据导数公式知，其中为任意常数，于是

，

又因为曲线经过点，即，代入上式得，

故所求曲线的方程为

.

上述例题实际上是求解含有未知函数的导数（或微分）所满足的方程.

一般地，我们把含有未知函数的导数（或微分）的方程称为**微分方程**．如果在一个微分方程中出现的未知函数只含一个自变量，这个方程称为常微分方程，本教材主要讨论常微分方程.

**注意**：在微分方程中，自变量及未知函数可以不出现，但未知函数的导数或微分必须出现．

微分方程中未知函数的导数（或微分）的最高阶数称为微分方程的**阶数**. 如是一阶微分方程，是二阶微分方程. 是三阶微分方程.

满足微分方程的函数称为微分方程的**解**，如函数，都是微分方程的解，其中不含任意常数，是具体的解，称为特解；含有任意常数，代表微分方程的所有解，称为通解.

一般地说，如果微分方程的解含有任意常数，且任意常数的个数和方程的阶数相等，这种解称为微分方程的**通解，**不含任意常数的解称为**特解**.阶微分方程的通解中含有个独立的任意常数.

在通解中，利用附加条件确定任意常数的取值，可得微分方程的特解. 用来确定通解中任意常数的附加条件称为**初始条件**. 如微分方程满足初始条件的特解为.

例1 验证：函数是微分方程的通解．

解 ，，将它们代入方程，得

，

所以，函数是微分方程的解，且含有两个独立的任意常数，故函数是微分方程的通解.

例2 求微分方程的通解.

解 



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**4.4.2 可分离变量的一阶微分方程**

**定义4.3** 形如

 （4.4.1）

的微分方程称为**可分离变量的**一阶**微分方程**.

解法:分离变量，可化为

  （4.4.2）

上式两边积分，得

 （4.4.3）

则微分方程的通解为

 （为任意常数）

其中，分别是，的一个原函数.

以上求解微分方程的方法称为**变量分离法**. （4.4.2）称为已分离变量的微分方程. （4.4.3）为（4.4.1）的通解表达式.

例3 求微分方程的通解.

解分离变量，得

，

两边积分，得

，

故有

，

故原方程的通解为

 .

例4 求微分方程的通解.

解分离变量，得



两边积分，得



故有



令，则原方程的通解为

.

例5求微分方程满足初始条件的特解.

解 变量分离，得

，

两边积分得

，

于是

，

故原方程的通解为

， 即，

将初始条件代入上式，可得，故原方程的特解为

.

**备注：可根据试讲时间调整内容和例题.**