

## 2022 年陕西省部分高等职业院校自主招生考试甲（A）

### 语文、数学、英语综合试题

#### 语文（100 分）

##### 一、选择题（共 8 小题，每小题 4 分，计 32 分）

1. 下列词语中，加点字的注音全部正确的一组是（ ）

- A. 癸丑（kuí） 爱戴（dài） 不无裨益（bì） 沧海一粟（lì）  
B. 造诣（yì） 吐哺（bǔ） 载笑载言（zǎi） 瞠目结舌（chéng）  
C. 辟谣（pì） 殷红（yān） 敷衍塞责（sè） 杀一儆百（jǐng）  
D. 肄业（sì） 丝绦（tāo） 不屑一顾（xiāo） 蓦然回首（mò）

2. 下列句子横线处所选填的汉字，有误的一项是（ ）

- A. 领导讲话应力求观点鲜明，言简意赅（赅、骇），不需要絮絮叨叨，连篇累牍。  
B. 我们应该因地迨（治、制）宜，将运河两岸打造成真正的绿色花园。  
C. 科技工作者在进行科学研究时一定要深思熟虑、细致入微，切莫贻（怡、贻）笑大方。  
D. 中美两国在一些问题上出现纷争，这是正常的。我们不能一叶障（障，嶂）目，不见泰山，应该看到对话与合作仍是两国关系的主流。

3. 依次填入下列各句横线处的词语，最恰当的一组是（ ）

（1）没有深厚的生活积淀和艺术功底，是写不出高\_\_\_\_\_的诗歌作品的。

（2）戴望舒把对“丁香姑娘”深厚的感情\_\_\_\_\_在他的《雨巷》里，引起了

读者的强烈共鸣。

(3) 鉴赏诗歌时，要体会这些诗的章法、韵律及其它方面的特点，认真\_\_\_\_诗的意象。

- A. 品位 灌注 揣摩                  B. 品位 贯注 揣测  
C. 品味 灌注 揣摩                  D. 品味 贯注 揣摩

4. 下列各句中，加点成语使用恰当的一项是（ ）

A. 为了救活这家濒临倒闭的工厂，新上任的厂领导积极开展市场调查，狠抓产 品质量和开发，真可谓处心积虑。

B. 日本著名的作家川端康成有着浓厚的崇拜女性的审美情趣，他塑造的女性形象几乎个个给人以美的感受，但他笔下的男性形象就相形见绌了。

C. 齐白石画展在美术馆开幕了，国画研究院的画家竞相观摩，艺术爱好者也趋之若鹜。

D. 西安疫情暴发后，大家积极响应政府号召，待在家里，街上显得静悄悄的，几乎是万人空巷。

5. 下列各句中，没有语病的一项是（ ）

A. 为了避免群众的合法权益不受侵害，有关部门作了相关提示。

B. 自疫情暴发以来，已经累计有超过 1000 万人次参与了核酸检测。

C. 自主知识产权所占比重是衡量一个国家科学发展的标志，而科学技术进步与否是国家富强的标志。

D. 这次冬奥会上，很多外国运动员被中国感动。

6. 下列文学常识表述有误的一项是（ ）

A. 《雨巷》是戴望舒的成名作和代表作，诗人因此被称为“雨巷诗人”，叶圣陶说《雨巷》是“替新诗的音节开了一个新的纪元”。

B. “初唐四杰”是王勃、杨炯、卢照邻、骆宾王的合称。

C. 白居易在文学上主张“文章合为时而著，歌诗合为事而作”，强调继承我国古典诗歌的现实主义优良传统。

D. 《聊斋志异》是一部文言短篇小说集，作者是明代小说家蒲松龄。

7. 下列《红楼梦》中的人物描写与人物对应正确的一组是（ ）

(1) 一双丹凤三角眼，两弯柳叶吊梢眉

(2) 身量未足，形容尚小

(3) 面若中秋之月，色如春晓之花

(4) 娴静时如姣花照水，行动处似弱柳扶风

- A. 王熙凤 惜春 贾宝玉 林黛玉                  B. 王熙凤 探春 李纨 林黛玉

C. 林黛玉 惜春 贾宝玉 史湘云      D. 王熙凤 惜春 贾宝玉 薛宝钗

8. 将下列句子填入横线处，顺序最恰当的一组是（ ）

\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_; \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_. 《诗经》和《离骚》分别开创了我国古代诗歌创作的现实主义和浪漫主义的先河。

①《离骚》抒写理想 ②抒写先民的喜怒哀乐 ③富于写实精神 ④抒写爱国激情  
⑤《诗经》广泛地反映古代社会生活 ⑥富于浪漫气息。

A. ⑤③②①⑥④    B. ⑤②③①④⑥    C. ①④⑥⑤②③    D. ①⑥④⑤③②

二、文言文阅读（阅读下面的文言文选段，完成9-11题。9、10题各3分，11题8分，计14分）

“五亩之宅，树之以桑，五十者可以衣帛矣。鸡豚狗彘之畜，无失其时，七十者可以食肉矣。百亩之田，勿夺其时，数口之家可以无饥矣；谨庠序之教，申之以孝悌之义，颁白者不负戴于道路矣。七十者衣帛食肉黎民不饥不寒然而不王者未之有也。”

“狗彘食人食而不知检，涂有饿莩而不知发。人死，则曰：‘非我也，岁也。’是何异于刺人而杀之，曰：‘非我也，兵也。’王无罪岁，斯天下之民至焉。”

9. 解释下列加点字的意思。（3分）

(1) 鸡豚狗彘之畜    (2) 申之以孝悌之义    (3) 非我也，兵也

10. 请用“/”给文中划线部分断句（3分）

七十者衣帛食肉黎民不饥不寒然而不王者未之有也。

11. 将下面的句子翻译成现代汉语（8分）

(1) 狗彘食人食而不知检，涂有饿莩而不知发。

(2) 王无罪岁，斯天下之民至焉。

三、现代文阅读（共3小题，12、13题各4分，14题6分，计14分）

### 最后的黄豆

爷爷是染布的。他爱吃黄豆出了名。在镇子西头，爷爷十七岁那年刷刷地在地上架起了好几口大染锅。这吃饭的手艺是“偷”来的。

爷爷从小喜欢跑进大染坊找老板的儿子斗蛐蛐。有时老板的儿子跟私塾先生念书，爷爷便蹲在一旁，直愣愣地盯着热气腾腾的大染锅。爷爷蹲着染布时，就从兜里摸出几粒炒熟的黄豆塞到嘴里嚼，这样一蹲就是一两个时辰。“呆瓜”，染布师傅往往这么笑话爷爷。当爷爷染出第一锅布时，大家才知道爷爷不呆。

那年，家里遭了大灾，爷爷架几口大锅开始染布。开业那天，镇子里所有人

都听到爷爷一边敲锣一边喊话，开张头半个月染布不收钱，染坏了一赔二。爷爷没钱请帮工，自己把麻绳往肚子上一勒，一把黄豆往嘴巴里一塞，一边香甜地嚼着，一边搅动大染锅。当爷爷嚼完三四把黄豆时，青布便染成了。青色衬着爷爷额头的汗珠，沉稳得像傍晚袭来的夜幕。

后来，那家大染坊被爷爷挤垮了。没过半月，爷爷快乐的嚼着黄豆把那几口锅搬进了大染坊。于是，镇子里又有了大染坊。那名声像染布匠拿搅锅棍敲锅一样，咣咣当当响得很。在嚼着一把又一把黄豆时，爷爷兜里也开始响着咣咣当当的银元声。

有了钱，除了每天有滋有味地多嚼几把黄豆，还娶了奶奶。迎亲那天，爷爷喝了好多酒，醉了，进洞房时还绊了一脚，兜里的黄豆全撒在地上，他捡了好一阵子，奶奶什么反应，到现在我也不知道。后来跟我讲这事时，爷爷还叹气，这一绊，不是什么好兆头，要不，后半辈子也不会活得这样磕磕绊绊。说这事时，爷爷喘着粗气，我帮着捶了半天腰，他还是喘得满脸猪肝紫。

其实，爷爷在生父亲的气。

闲时，爷爷经常是一边慢慢嚼着黄豆一边跟我聊天，像在咀嚼他的一生。他说，父亲是一个“倒钱筒”。父亲是爷爷的独苗，奶奶宠着他，惯着他。听爷爷说，父亲才十岁，就开始进大烟馆。没钱，就赊账。烟馆老板拿着赊账本来计钱时，爷爷才明白是怎么回事。

父亲就像一颗荒野的树那样疯长。

我十岁那年，三天三夜，父亲跟人赌输了。大染坊被抵了赌债。那一天爷爷没有嚼他的黄豆，唉声叹气，一脸乌云。

搬出大染坊时，爷爷习惯性地掏出黄豆，迟疑了一下，爷爷这回没有把黄豆塞进嘴巴，而是把黄豆一路撒在地上。

没几年，爷爷病得不行了。父亲依然整天不着家，爷爷的安危只是他耳边刮过一阵微风。

临终前的那个晚上，爷爷示意我到他跟前，他手中攥着一个小布袋，打开来，是些黄豆。昏暗的灯光下，豆子炒得金灿灿的，爷爷说，这辈子只剩下这点黄豆了，他的声音很轻，连他旁边油灯的火苗都没有动一下，他颤巍巍拈出一颗豆子，习惯性地放入口中，又嚼着它。不知是黄豆太硬还是爷爷老了，牙口不行，他没嚼动，又把豆子放入袋中。

他叹叹气，说这辈子就爱这黄豆，人走了带上它，也算来世上留个念想。他慈爱地对我说，如果你长大了真活不下去，可以再到爷爷这里来拿这黄豆吃。不过，你要是争气，最好就别来找我了，他语气中满是沮丧。

我愣愣的，不太明白，点了点头。

第二天早晨，爷爷走了，手里紧紧攥着那小袋嚼不动的黄豆。邻居帮忙葬了爷爷后，父亲才回来。没人怪他，他在邻里眼中只是一个能够看得见的影子。

父亲长号着，声音凄厉。如同塌了脊梁。大家都知建他为什么哭，整整两

天两夜，他履了好几个人把小院子拘了一遍又一，大来而知道他为什纸拌了，还是没有找到传说中爷爷那几坨金子。他疯了。

后来，一个全匠跟我说爷爷确实有几坨金子。不过，爷爷临终前偷偷让他把它们打成了一颗颗金珠子。

我蓦然明白，爷爷那小袋黄豆是什么了。爷爷给我留了一笔活命钱。

有人曾问我，金子最终找到了吗？

当然没有。爷爷的坟头早被我平了，当时还有人说，我跟我那疯死掉的父亲一样，也是忤逆不孝。

现在我有了自己的企业，人们称我是什么“著名企业家”。不久前，一次慈善会上，我说了，死后捐出全部财产，我那个儿子和老婆都不跟我说话了。

为什么这么做？有记者问我，我一时语塞，眼前浮现出爷爷那小袋最后的黄豆。

（改自王琼华《最后一碗黄豆》）

12. 小说中“爷爷这回没有把黄豆塞进嘴巴，而是把黄豆一路撒在地上”，这一行为反映了爷爷什么样的心态？请简要分析。（4分）

13. 小说多次写到爷爷嚼黄豆，这在全文中有何作用？请简要概括。（4分）

14. 小说以“最后的黄豆”为标题，寓意何在？这对现实人生有许多启示，谈谈你感受最深的一点。（6分）

#### 四、名句默写（共5个空，每空2分，计10分）

15. （1）海日生残夜，  
（2）秋水共长天一色。  
（3）乱石穿空，  
（4）君子生非异也，

#### 五、作文（30分）

16. 阅读下面的材料，根据要求写作。

成长路上，有彩虹，也有风雨。成功时，留一点清醒给自己，你会发现，更多的理想需要追求；失败时，留一点梦想给自己，你会发现，前方的道路何其宽广；幸福时，留一点责任给自己，你会发现，帮助别人多么快乐；忧伤时，留一点微笑给自己，你会发现，平凡的生活充满阳光。

请以“留一点\_\_\_\_\_给自己”为题目，写一篇文章。

要求：①将标题补充完整。②文体不限（诗歌除外）。③不少于 300 字

## 英语（100 分）

I. 单项选择（从下面各小题给出的 A、B、C、D 四个选项中选出一个最佳选项，共 20 小题，每小题 1 分，计 20 分）

1. —\_\_\_\_\_ does Mike help his mother with the housework?  
—About twice a week.  
A. How often      B. How long      C. How much      D. How soon
2. Of these two coats, I want to buy the \_\_\_\_\_ one.  
A. cheapest      B. less cheap      C. cheaper      D. cheap
3. —Must we hand in the homework right now?  
—No, you \_\_\_\_\_.  
A. mustn't      B. needn't      C. don't      D. can't
4. I'll arrive \_\_\_\_\_ Beijing \_\_\_\_\_ 7 am.  
A. in, at      B. at, in      C. in, on      D. on, at
5. Look! \_\_\_\_\_ heavy the snow is! Let's go out to play with the snow.  
A. What      B. How      C. What a      D. How a
6. —Tom, be quiet! The baby \_\_\_\_\_.  
—Sorry, mum.  
A. slept      B. sleeps      C. is sleeping      D. had slept
7. —May I use your bike?  
—Sorry, there's \_\_\_\_\_ with it.  
A. something wrong      B. nothing wrong  
B. wrong nothing      D. wrong something
8. —Can you play \_\_\_\_\_ violin?  
—Sure. It's a piece of cake for me.  
A. a      B. an      C. the      D. /
9. It is time \_\_\_\_\_ class.  
A. for have      B. have      C. to have      D. to having

10. Jimmy would like \_\_\_\_ a teacher when he grows up.

- A. to be                      B. be                      C. being                      D. been

11. I'm looking forward to \_\_\_\_ you soon.

- A. hearing of              B. hear from              C. hearing from              D. hear of

12. —Whose pen is it?

—It's not \_\_\_\_ pen.

- A. my                      B. mine                      C. I'm                      D. I

13. I think this book is interesting, but not \_\_\_\_ likes reading it.

- A. somebody              B. anybody              C. nobody              D. everybody

14. I can't find my note book anywhere. I'm afraid I \_\_\_\_ it.

- A. lose                      B. lost                      C. have lost                      D. was losing

15. —There isn't \_\_\_\_ ink here. Can you get \_\_\_\_ for me?

—All right.

- A. some, any              B. any, some              C. any, any              D. some, some

16. I am going to take Peter to see an exciting film \_\_\_\_ he can relax(放松) himself.

- A. because                      B. so that                      C. when                      D. as if

17. The girl \_\_\_\_ at the corner is Tom's sister.

- A. who is sitting              B. is sitting              C. who are sitting              D. was sitting

18. —Could you tell me \_\_\_\_?

—Sure. This one.

- A. which book is better              B. the better book is which  
B. what is better book              D. is this book better

19. —\_\_\_\_ you \_\_\_\_ your homework tonight?

—Yes.

- A. Do, do                      B. Can, did                      C. Will, do                      D. Are, do

20. —I won the first prize in the writing competition.



—— !

A. Have a good time    B. Good luck    C. Best wishes    D. Congratulations

II. 完型填空 ( 阅读下面短文。从短文后各小题所给的 A、B、C、D 四个选项中，选出一个可以填入横线上的最佳选项，共 10 小题，每小题 3 分，计 30 分 )

Every year millions of tourists from all over the world travel long ways to come to visit China. They are 21 in the culture, the history and the natural beauty as well as the great changes in China these years.

China is a great country 22 a long history. It has many places of interest, such as the Great Wall, the Summer Palace, the Palace Museum and the Shaolin Temple. China is also a large country. It has many natural and beautiful 23, such as the West Lake, the Huang Mountains, the Changjiang River and Guilin Landmark.

We all know that the Palace Museum is the 24 museum in China. It is in the center of Beijing. It has a 25 of over 560 years. There are over 980 beautiful buildings and palaces in it. The kings and their 26 lived there in the old days. Now it becomes the museum of palace. After 27 palaces, tourists may know a lot of 28 art treasures of ancient times.

29 years, great changes have taken place in China. China is becoming more and more beautiful. More and more foreign friends are coming to 30 about China by traveling and visiting.

21. A. boring            B. sorry            C. nervous            D. interested

22. A. with            B. without            C. of            D. has

23. A. rivers            B. views            C. lakes            D. mountains

24. A. longest            B. smallest            C. largest            D. shortest

25. A. history            B. news            C. market            D. report

26. A. friends            B. teachers            C. families            D. students

27. A. visit            B. visiting            C. visited            D. visits

- 28.A.Chinese      B.France      C.America      D.Italy  
29.A.Those      B.This      C.That      D.These  
30.A.take      B.speak      C.think      D.learn

III.阅读理解 ( 阅读下列短文 , 从每小题所给的 A、B、C、D 四个选项中选出一个最佳选项 , 共 10 小题 , 每小题 2 分 , 计 20 分 )

It is raining so we can't go out. I'm happy about that because I like being at home. But my sisters, Jane and Helen are not. They want to go out. In the afternoon they often play tennis outside. This afternoon the rain stops them. They are playing computer games in their room.

"Can I play with you?" I ask them.

Jane says, "No, Tom! This morning you ate my bread and you didn't say sorry!" "I don't want to play with you either because you broke my cup and you didn't say sorry," says Helen.

I walk back to my room. I call my friend Jimmy but he doesn't answer. I begin to watch TV but it's boring. I make model planes but it's boring too. Then I walk into Jane and Helen's room again.

"Sorry, Jane. Sorry, Helen! Can I play with you now?" I say.

"OK!" they say.

31. Who is happy about the rain ?

- A. Tom.      B. Jane      C. Helen      D. Jimmy

32. What do Jane and Helen often do in the afternoon?

- A. They often watch TV.      B. They often play tennis.  
C. They often make model planes.      D. They often play computer games.

33. Helen doesn't want to play with the writer because \_\_\_\_\_.

- A. he can't answer her questions  
B. he ate her bread and didn't say sorry

C. he can't play computer games well

D. he broke her cup and didn't say sorry

34. When the writer is in his room that afternoon, he feels \_\_\_\_\_.

A. happy

B. angry

C. bored

D. relaxed

35. The story tells us \_\_\_\_\_.

A. to do sports every day

B. to listen to our big sisters

C. not to go out when it rains

D. not to be afraid to say sorry

## B

Jack, a middle school student, used to work hard at all his lessons. Every day he got up earliest and went to bed latest of the family. He seldom did outdoor activities. Sometimes his parents worried about his health. They told him to have a rest and relax himself by watching TV, but he didn't follow them. He only read his books. Finally he fell ill and had to stay in hospital for several weeks. Now Jack is in poor health. Though he goes to school every day, he doesn't do so well in his studies as before.

From Jack's story, we can see that health is very important. If you become sick, it is nearly impossible to go on with your education, much less make your dreams come true. On the other hand, if you are strong you can go out to do everything well.

Now we know health is very important. How to keep it? First, we should spend some time taking exercise every day to keep fit. Second, we must go to bed earlier and get up earlier.

In a word, health is as important as working hard for a person. So we should, on one hand, work hard, and on the other hand, pay attention to our health.

36. Jack used to \_\_\_\_\_.

A. work hard

B. play sports

C. get up late

D. go to bed early

37. What did Jack's parents worry about?

A. Jack's studies.

B. Jack's sleep.

C. Jack's health.

D. Jack's attention.

38. Jack stayed in hospital for \_\_\_\_\_.

A. several hours

B. seven days

C. two weeks

D. several weeks

39. What can we learn from Jack's story?

- A. We need to go out.                      B. Health is very important.  
C. Dreams are very important.              D. We don't need to learn.

40. How many ways of keeping fit are mentioned in the passage?

- A. One.              B. Two.              C. Three.              D. Four.

IV. 补全对话（从对话后各小题所给的 A、B、C 三个选项中，选出一个可以填入横线上的最佳选项。共 10 小题，每小题 2 分，计 20 分）

(Rob and Alex are in a restaurant now)

Alex: Happy Thanksgiving, Rob.

Rob: 41, Alex. Happy Thanksgiving to you too.

Alex: The restaurant 42 a special meal today.

Rob: Yes! They made a Thanksgiving meal, and 43 !

Alex: 44 is your favorite part of the Thanksgiving meal?

Rob: That's a 45 question. I like the turkey.

Alex: 46 the potatoes?

Rob: Delicious! I like potatoes with 47 butter.

Alex: And green beans?

Rob: Those 48 delicious, too. And corn! I like corn at Thanksgiving.

Alex: Do you like pumpkin pie for dessert?

Rob: 49 ! Pumpkin pie is the traditional Thanksgiving dessert!

Alex: You like everything!

Rob: I do. Thanksgiving meal is 50 favorite meal of the year!

41. A. Thanks                      B. You are wrong                      C. You're welcome

- |                      |                       |                    |
|----------------------|-----------------------|--------------------|
| 42.A. preparing      | B. prepared           | C. to prepare      |
| 43.A. it smell great | B.it will smell great | C. it smells great |
| 44.Which             | B. What               | C.When             |
| 45.A.hard            | B.wrong               | C.sad              |
| 46.A.Why not         | B.What if             | C.What about       |
| 47.A.many            | B.much                | C.too              |
| 48.A.are             | B.is                  | C.am               |
| 49.A. Excuse me      | B.Never mind          | C.Of course        |
| 50.A.his             | B.my                  | C.your             |

V. 填空题（根据所给的汉语内容，用英语完成下列句子，每空限填一词，共 5 小题，每小题 2 分，计 10 分）

51. 快点！我想一会儿我们将赶上他们。

Let's hurry! I think we will \_\_\_\_\_ with them in a minute.

52. 因为足球比赛，他太兴奋了睡不着。

Because of the football game, he was \_\_\_\_\_ excited \_\_\_\_\_ sleep.

53. 你的手好脏啊！快去洗。

54. \_\_\_\_\_ your hands are! Go and wash them now.

54. 经过一段时间的锻炼，她比以前健康多了。

After exercising for some time, she's much more \_\_\_\_\_ before.

55. 老师告诉我们不要把今天的事推迟到明天。

The teacher tells us not to \_\_\_\_\_ what we can do today till tomorrow.

## 数学 (100 分)

一、单项选择题 (共 8 小题, 每小题 5 分, 计 40 分)

1. 设集合  $S = \{-3, -1, 1, 2\}$ , 集合  $T = \{-2, 1, 2\}$ , 则  $S \cap T =$  ( )  
A.  $\{1\}$                       B.  $\{2\}$                       C.  $\{-2, 1, 2\}$                       D.  $\{1, 2\}$
2. 函数  $f(x) = \frac{1}{x-2}$  的定义域为 ( )  
A.  $(-\infty, 2]$                       B.  $(-\infty, 2)$                       C.  $(-\infty, 2) \cup (2, +\infty)$                       D.  $\mathbb{R}$
3. 函数  $y = a^x + 3$  ( $a > 0$  且  $a \neq 1$ ) 的图象恒过定点 ( )  
A.  $(1, 0)$                       B.  $(0, 4)$                       C.  $(4, 0)$                       D.  $(3, 3)$
4. 函数  $f(x) = 2^x + 2x$  的零点所在的区间为 ( )  
A.  $(0, 1)$                       B.  $(-1, 0)$                       C.  $(1, 2)$                       D.  $(2, 3)$
5. 若直线  $x - 3y + 1 = 0$  与  $x + ay - 3 = 0$  互相垂直, 则实数  $a$  的值为 ( )  
A.  $-3$                       B.  $-\frac{1}{3}$                       C.  $\frac{1}{3}$                       D.  $3$
6. 若事件  $A$  的概率  $P(A) = \frac{1}{3}$ , 则  $A$  的对立事件的概率为 ( )  
A.  $\frac{1}{3}$                       B.  $\frac{2}{3}$                       C.  $\frac{1}{2}$                       D.  $1$
7. 已知平面向量  $\vec{a} = (\lambda, 2)$ ,  $\vec{b} = (3, -3)$ , 且  $\vec{a} \perp \vec{b}$ , 则实数  $\lambda$  的值为 ( )  
A.  $2$                       B.  $1$                       C.  $0$                       D.  $-3$
8. 设等差数列  $\{a_n\}$  的前  $n$  项和为  $S_n$ , 若  $a_7 = 3$ , 则  $S_{13}$  的值为 ( )  
A.  $28$                       B.  $39$                       C.  $56$                       D.  $117$

二、填空题（共 5 小题，每小题 6 分，计 30 分）

9. 已知  $x > 0$ ，函数  $f(x) = x + \frac{4}{x}$  的最小值为\_\_\_\_\_.

10. 在  $\triangle ABC$  中，若  $BC=2, AC=1, A=30^\circ$ ，则  $\sin B=$ \_\_\_\_\_.

11. 将函数  $y = \sin(2x + \frac{\pi}{6})$  的图象向右平移  $\frac{\pi}{6}$  个单位后，所得图象对应的函数解析式为\_\_\_\_\_.

12. 已知  $\cos \theta = -\frac{3}{5}$ ，则  $\cos 2\theta$  的值为\_\_\_\_\_.

13. 底面半径长为 2，母线长为 3 的圆柱的体积为\_\_\_\_\_.

三、解答题（共 3 小题，每小题 10 分，计 30 分，解答应写出过程）

14. 若二次函数  $y = ax^2 + bx + c$  的图象的顶点是  $(2, 1)$  且经过点  $(1, -2)$ ，求此二次函数解析式.

15. 在等差数列  $\{a_n\}$  中，已知  $a_2$ 、 $a_5$  是一元二次方程  $x^2 - 19x + 70 = 0$  的两个根.

(1) 求  $a_2$ 、 $a_5$ .

(2) 求  $\{a_n\}$  的通项公式.

16. 设圆的方程为  $x^2 + y^2 - 4x - 5 = 0$

(1) 求该圆的圆心坐标及半径;

(2) 若此圆的一条弦 AB 的中点为  $P(3, 11)$ ，求直线 AB 的方程。