



BHARTIYA SKILL DEVELOPMENT UNIVERSITY

Registration No.:

School of General Education
Session: 2021-22 (Winter Semester)
B. Voc. Program, 1st Semester,
End-Sem. Examination

Course Code: GEN1101

Time: 2 Hours

Course Name: English Language and Comprehension

Max. Marks: 50

Instructions: The question paper comprises three sections A, B & C. Attempt all the questions. Marks allotted are mentioned against each section.

Section-A

10X01 = 10 Marks

Q1. Fill in the blank with suitable noun:

The table is made of _____. (wood/woods)

Q2. Fill in the blank with the appropriate degree of comparison.:

Sheena is the _____ girl in the class. (more beautiful/ most beautiful)

Q3. The homophone for the word *bye* is _____. (buy/bay)

Q4. State whether the following sentence is True or False: -

Rip's village was surrounded by the Catskill Mountains.

Q5. Rip Van Winkle lived in a small village in _____ .

(a) South America

(c) India

(b) South Africa

(d) North America

Q6. Fill in the blank with suitable pronoun:

I have hurt _____. (me/myself)

Q7. The homophone for the word *son* is _____. (sun/sum)

Q8. The superlative degree of the word *good* is _____.

Q9. Fill in the blank with the correct word from the given verbs in the bracket: -

I _____ (go/goes) to school daily.

Q10. She lives in _____ Ajmer. The suitable article in the blank is:

(a) A

(c) An

(b) The

(d) Zero

Section B

04X04 = 16 Marks

Q11. What happened to Helen Keller after her illness?

Q12. Describe Helen Keller as a child.

Q13. What did Mowgli do when he was not learning?

Q14. Explain the given line with reference to the context:

How wonderful to see you again, Papa!

Section C

04X06 = 24 Marks

Q15. Write the summary of *Velu: A Fisherman*.

Q16. Rearrange the given phrases/words to form meaningful sentences:

- (a) the jungle /grew up/ with /the wolf cubs/ in/ mowgli.
- (b) fun/ he/ stare/ for/ used to.
- (c) was/ the/ of /1880 /it/ summer.
- (d) baby /may/ not/ the/ live.
- (e) hair /she / not/ comb/ her / would / anyone / let.
- (f) was/ a /velu/ fisherman.

Q17. Write utterances (one sentence in each) to express each of the following notions:

- (a) Making Request
- (b) Asking for Permission
- (c) Agreement
- (d) Disagreement
- (e) Expressing Apologies
- (f) Greeting while meeting someone

Q18. Read the passage carefully and answer the questions given below:

Food can maintain and save life. It can destroy life as well. Proper food serves as medicine; improper food works as poison. A little care about the quality and quantity of food will keep us healthy and happy. If we go about eating all sorts of things, we shall become sick.

We take pride in calling ourselves civilized. Being sensible means to know the difference between good and bad, right and wrong. It will not do to become slaves to our tongue or taste. Even cattle, birds and beasts eat only what is best for their body.

We mostly eat processed food and refined sugar. We pay heavily for junk food, for Chinese dishes or deep fried snacks. As a result, we catch diseases. We have moved away from mother nature. We laugh at the rules of hygiene, healthy diet and the advice of our elders. This has given rise to diabetes.

We offer chocolates, cakes and ice creams too often to our children. We also attend parties or dine out every day. This way we invite obesity and diabetes.

- (a) What are the functions of food?
- (b) What is meant by improper food?
- (c) How can we keep ourselves healthy?
- (d) Find word from the passage that means the same as *being fat*.
- (e) What has given rise to diabetes?
- (f) Give a suitable title for the passage.



Course Code: GEN1101

Time: 2 Hours

Answer Key

Section-A

10X01 = 10 Marks

- Q1. Fill in the blank with suitable noun:
The table is made of _____. (**wood/woods**)
- Q2. Fill in the blank with the appropriate degree of comparison.:
Sheena is the _____ girl in the class. (more beautiful/ **most beautiful**)
- Q3. The homophone for the word *bye* is _____. (**buy/bay**)
- Q4. State whether the following sentence is True or False: -
Rip's village was surrounded by the Catskill Mountains. (**True**)
- Q5. Rip Van Winkle lived in a small village in.....
(a) South America (c) India
(b) South Africa (d) **North America**
- Q6. Fill in the blank with suitable pronoun:
I have hurt _____. (**me/myself**)
- Q7. The homophone for the word 'son' is _____. (**sun/sum**)
- Q8. The superlative degree of the word *good* is **best**.
- Q9. Fill in the blank with the correct word from the given verbs in the bracket: -
I _____ (**go/goes**) to school daily.
- Q10. She lives in _____ Ajmer. The suitable article in the blank is:
(a) A (c) An
(b) The (d) **Zero**

Section B

04X04 = 16 Marks

Q11. What happened to Helen Keller after her illness?

Ans. Helen was not the same after her illness. She could neither see nor hear after her illness.



Q12. Write a short introduction of yourself.

Ans. Students will write their personal details.

Q13. What did Mowgli do when he was not learning?

Ans. When Mowgli was not learning, Mowgli sat out in the sun and slept and ate and went to sleep again.

Q14. Explain with reference to the context:

How wonderful to see you again, Papa!

Ans. The above statement has been taken from the story, Rip Van Winkle. Rip's daughter said this to her father when he told her that he was his father who left home twenty years ago.

Section C

04X06 = 24 Marks

Q15. Write the summary of *Velu: A Fisherman*.

Ans. Velu was a fisherman who lived in a small house near the sea. He had good nets and a strong boat for fishing. Velu was greedy and selfish by nature. He was unkind too as he never liked to share his fish with other fishermen.

One day, Velu went fishing to the sea with his fellow fishermen. Velu, being greedy, went a long way into the sea and caught plenty of fish. The fish he caught were small in size. Suddenly, Velu saw many big fish and wanted to catch them. So, he threw away all his small fish and cast his net again to catch the bigger fish. The other fishermen offered to help him, but Velu refused to take their help. Hence, they all went away.

Velu caught a lot of big fish this time in his net. The net became so heavy that Velu could not pull it into his boat alone. The fish broke the net and escaped into the sea, damaging the fishing net. Velu realized his mistake and decided not to be greedy again. At night, Velu and his wife had nothing to eat. His friend fisherman offered them fish for dinner and also promised to help Velu mend his net.

Q16. Make meaningful sentences with the following jumbled words:

(a) the jungle /grew up/ with /the wolf cubs/ in/ mowgli.

Mowgli grew up with wolf cubs in the jungle.

(b) fun/ he/ stare/ for/ used to.

He used to stare for fun.

(c) was/ the/ of /1880 /it/ summer.

It was the summer of 1880.

(d) baby /may/ not/ the/ live.

The baby may not live.

(e) hair /she / not/ comb/ her / would / anyone / let.

She would not let anyone comb her hair.

(f) was/ a /velu/ fisherman.



Velu was a fisherman.

Q17. Write example sentences (one sentence in each) to express each of the following notions:

- (a) Making Request – **Would you please help me?**
- (b) Asking for Permission- **May we go to play?**
- (c) Agreement – **I am with you.**
- (d) Disagreement – **I don't agree with you.**
- (e) Expressing Apologies- **I am awfully sorry.**
- (f) Greeting while meeting someone- **Hello! How are you?**

Q18. Read the passage carefully and answer the questions given below:

Food can maintain and save life. It can destroy life as well. Proper food serves as medicine; improper food works as poison. A little care about the quality and quantity of food will keep us healthy and happy. If we go about eating all sorts of things, we shall become sick. We take pride in calling ourselves civilized. Being sensible means to know the difference between good and bad, right and wrong. It will not do to become slaves to our tongue or taste. Even cattle, birds and beasts eat only what is best for their body. We mostly eat processed food and refined sugar. We pay heavily for junk food, for Chinese dishes or deep fried snacks. As a result, we catch diseases. We have moved away from mother nature. We laugh at the rules of hygiene, healthy diet and the advice of our elders. This has given rise to diabetes.

We offer chocolates, cakes and ice creams too often to our children. We also attend parties or dine out every day. This way we invite obesity and diabetes.

- (a) What are the functions of food?
- (b) What is meant by improper food?
- (c) How can we keep ourselves healthy?
- (d) Find word from the passage that means the same as *being fat*.
- (e) What has given rise to diabetes?
- (f) Give a suitable title for the passage.

Answers:

- (a) Food maintains and saves life.
- (b) Food which is of poor quality and has harmful effect on the body.
- (c) A little care about the quality and quantity of food will keep us healthy
- (d) Obesity
- (e) We don't follow the rules of hygiene and healthy diet. We eat processed, fried or junk food.
- (f) Healthy Food.





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Max. Marks: 50

Instructions: The question paper comprises three sections A, B & C. Attempt all the questions. Marks allotted are mentioned against each section.

Section-A

10X01 = 10 Marks

Q1. Fill in the blank with suitable noun:

Laughter is a sign of _____. (happy/happiness)

Q2. Fill in the blank with the appropriate degree of comparison.:

The giraffe is the _____ of all living land animals. (taller/tallest)

Q3. The superlative degree of the word *strong* is _____.

Q4. State whether the following sentence is True or False:

Velu was a farmer.

Q5. The comparative degree of the word *bright* is _____.

Q6. Fill in the blank with suitable pronoun:

They do their work _____. (themselves/themselves)

Q7. The homophone for the word *ate* is _____. (eight/at)

Q8. Who told Mowgli that honey was pleasant to eat?

(a) Bagheera

(c) Black Owl

(b) Father Wolf

(d) Baloo

Q9. Fill in the blank with the correct word from the given verbs in the bracket: -

Ram _____ (plays/play) cricket daily.

Q10. I have _____ pen. The suitable article in the blank is:

(a) A

(c) An

(b) The

(d) Zero

Section B

04X04 = 16 Marks

Q11. Describe the nature of Velu at the end of the story.

Q12. Write a short introduction of yourself.

Q13. What did Mowgli discover at the Council Rock?

Q14. Explain the given line with reference to the context:

Give the poor child what she wants.

Section C

04X06 = 24 Marks

Q15. Write the summary of *Rip Van Winkle*.

Q16. Rearrange the given phrases/words to form meaningful sentences:

- (a) ink/in the/much/how/bottle/is/there
- (b) the dog/every morning/the old man/for a walk/ takes
- (c) things/spare time/we do/in our/lots of
- (d) till/you/come back/wait/here/shall/i
- (e) you/fail/will/your time/waste/if/you
- (f) have/you/any/pen/do/good

Q17. Make sentences using the following words:

- (a) Selfish
- (b) Magical
- (c) Thirsty
- (d) Doll
- (e) Village
- (f) Healthy

Q18. Read the passage carefully and answer the questions given below:

The cinema is the cheapest source of entertainment today. Millions of people see movies and enjoy them. It is a good pastime in all the places – big or small. The cinema industry has made rapid progress after independence. In the beginning there were silent, and black and white movies. Now we are dazzled by the colours in every movie.

Big posters are seen on the walls of cities and towns for advertisements. They also announce the coming movies in the city. There is always a rush before the booking windows. So the tickets are often sold in the black market or at a premium.

On the one hand the cinema is a source of entertainment. On the other it is also a source of knowledge and information. Films satisfy all the sections of people and their different tastes. There are religious movies and historical movies. They recreate the past, the old culture and lifestyle. Social films spread awareness about social evils of dowry, casteism and communal feelings. Some films expose the corruption in high places among the policemen and the citizens.

- (a) Why is the cinema so much popular?
- (b) How can you say that the cinema industry has made rapid progress after independence?
- (c) Why are tickets often sold in the black market?
- (d) Mention any two advantages of the cinema?
- (e) What is the main purpose of making social films?
- (f) Give a suitable title for the passage.





School of General Education

Session: 2021-22

B. Voc. Program, 1st Semester,

End-Sem. Examination

Course Code: GEN1101

Time: 2 Hours

Answer Key SET B

Section-A

10X01 = 10 Marks

- Q1. Fill in the blank with suitable noun:
Laughter is a sign of _____. (happy/happiness)
- Q2. Fill in the blank with the appropriate degree of comparison.:
The giraffe is the _____ of all living land animals. (taller/tallest)
- Q3. The superlative degree of the word *strong* is **strongest**.
- Q4. State whether the following sentence is True or False: -
Velu was a farmer. (**False**)
- Q5. The comparative degree of the word *bright* is **brighter**.
- Q6. Fill in the blank with suitable pronoun:
They do their work _____. (themselves)
- Q7. The homophone for the word *ate* is _____. (**eight/at**)
- Q8. Who told Mowgli that honey was pleasant to eat?
(a) Bagheera (c) Black Owl
(b) Father Wolf (d) **Baloo**
- Q9. Fill in the blank with the correct word from the given verbs in the bracket: -
Ram _____ (**plays/play**) cricket daily.
- Q10. I have _____ pen. The suitable article in the blank is:
(a) **A** (c) An
(b) The (d) Zero

Section B

04X04 = 16 Marks

Q11. Describe the nature of Velu at the end of the story.

Ans. Velu became kind and generous. He helped other fishermen. He shared his fish



with those who had caught none. Everyone liked him.

Q12. Write a short introduction of yourself.

Ans. Students will write their personal details.

Q13. What did Mowgli discover at the Council Rock?

Ans. Mowgli discovered that if he stared hard at any wolf, the wolf would be forced to drop his eyes.

Q14. Explain with reference to the context:

Give the poor child what she wants.

This line has been taken from the story, Helen Keller. Helen's father says the above statement to her mother because she was crying.

Section C

04X06 = 24 Marks

Q15. Write the summary of *Rip Van Winkle*.

Ans. Rip Van Winkle was a simple, kind hearted man who lived in a small village in North America. He told good stories and so the children loved him. Rip's only problem was that he was lazy and spent his time shooting, fishing and dreaming.

One day, Rip went to the Catskill Mountains. He saw a strangely dressed man who was trying to lift a big barrel. Rip kindly lifted the barrel and went up the mountain. When they came to a level field, Rip saw seven men playing a game. They gave him something to drink. After drinking, Rip fell asleep.

When Rip woke up everything had changed. He went to his village and could not recognize anything. He also had become an old man. He saw a young woman with a baby. She told him that her father's name was Rip. Rip was very happy to see his daughter. He went and lived in his house very happily.

Q16. Make meaningful sentences with the following jumbled words:

(a) ink/in the/much/how/bottle/is/there

How much ink is there in the bottle?

(b) the dog/every morning/the old man/for a walk/ takes

The old man takes the dog for a walk every morning.

(c) things/spare time/we do/in our/lots of

We do lots of things in our spare time.

(d) till/you/come back/wait/here/shall/i

I shall wait here till you come back.

(e) you/fail/will/your time/waste/if/you

You will fail if you waste your time.



- (f) have/you/any/pen/do/good
Do you have any good pen?

Q17. Make sentences with the following words:

- (a) Selfish – I am not **selfish**.
- (b) Magical- These mountains are **magical**.
- (c) Thirsty- She is **thirsty**.
- (d) Doll- I have a **doll**.
- (e) Village- I live in **village**.
- (f) Healthy- He is **healthy**.

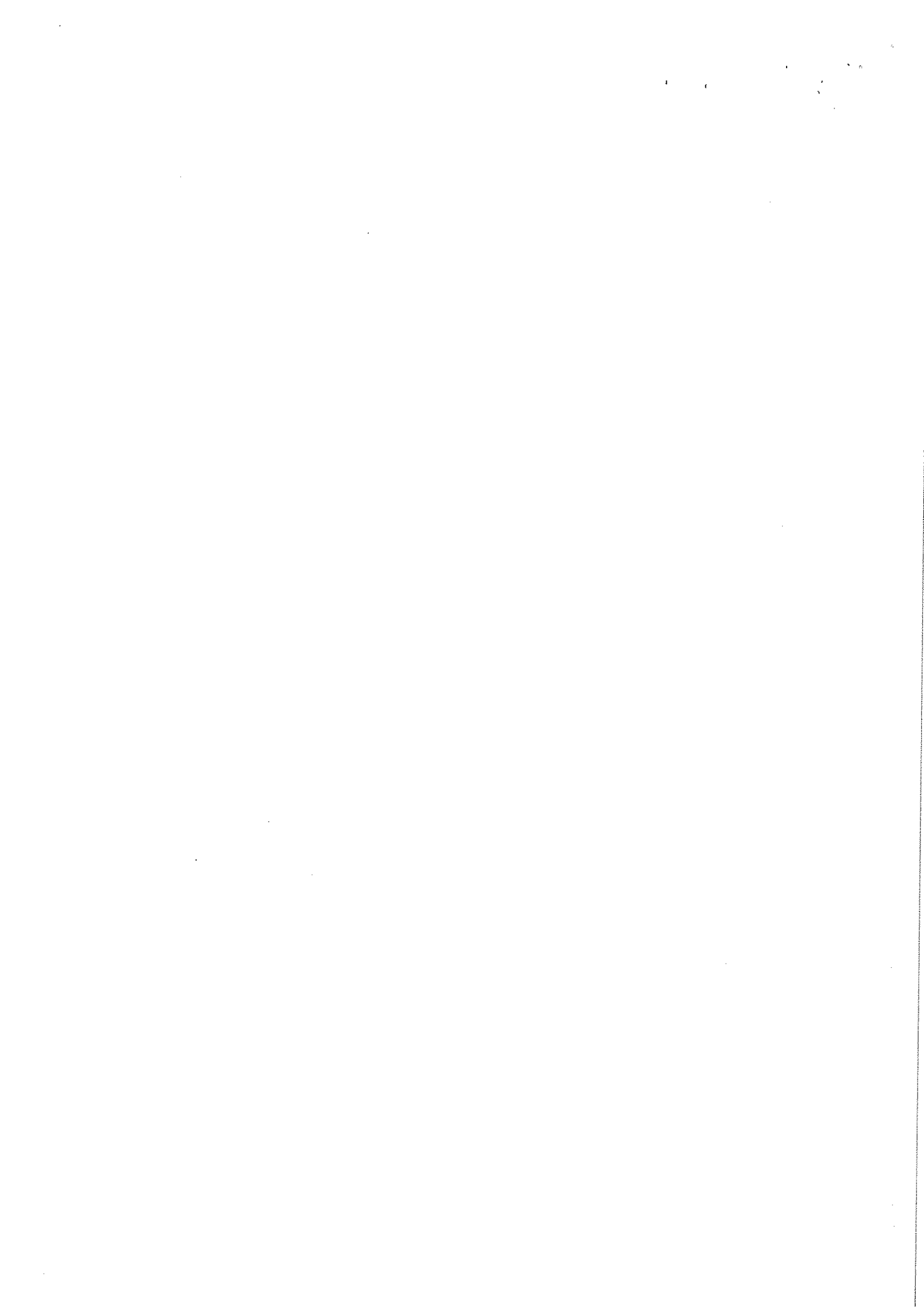
Q18. Read the passage carefully and answer the questions given below:

The cinema is the cheapest source of entertainment today. Millions of people see movies and enjoy them. It is a good pastime in all the places – big or small. The cinema industry has made rapid progress after independence. In the beginning there were silent, and black and white movies. Now we are dazzled by the colours in every movie. Big posters are seen on the walls of cities and towns for advertisements. They also announce the coming movies in the city. There is always a rush before the booking windows. So the tickets are often sold in the black market or at a premium. On the one hand the cinema is a source of entertainment. On the other it is also a source of knowledge and information. Films satisfy all the sections of people and their different tastes. There are religious movies and historical movies. They recreate the past, the old culture and lifestyle. Social films spread awareness about social evils of dowry, casteism and communal feelings. Some films expose the corruption in high places among the policemen and the citizens.

- (a) Why is the cinema so much popular?
- (b) How can you say that the cinema industry has made rapid progress after independence?
- (c) Why are tickets often sold in the black market?
- (d) Mention any two advantages of the cinema?
- (e) What is the main purpose of making social films?
- (f) Give a suitable title for the passage.

Answers:

- (a) The cinema is so much popular because it is the cheapest means of recreation and a good pastime.
- (b) Earlier there were silent, and black and white movies. Now we are dazzled by the colours in the movies.
- (c) Tickets are often sold in the black market because there is always a huge rush before the booking windows.
- (d) The cinema is a source of entertainment. It is also a source of knowledge and information.
- (e) The main purpose of making social films is to spread awareness about social evils of dowry, casteism and communal feelings.
- (f) Cinema: Source of Entertainment & Information





School of General Education
Session: 2021-22 (Winter Semester)
B. Voc. Program, 1st Semester,
End-Sem. Examination

Course Code: GEN 1103

Time: 2 Hours

Course Name: Applied Mathematics

Max. Marks: 50

Instruction: 1. Calculator is strictly prohibited.
2. Missing data if any can be suitably assumed.

Section – A

10X01 = 10 Marks

Q1. If $A = \{3, 6, 9, 12, 15\}$ and $B = \{9, 10, 11, 12\}$, then $B - A$ is

- (A) $\{9,10,11,12\}$ (B) $\{10,11\}$
(C) $\{ \}$ (D) $\{3,6,15\}$

Q2. Mode is the.....

- (A) middle most frequent value (B) least frequent value
(C) maximum frequent value (D) none of these

Q3. Which of the following number is the prime number?

- (A) 100 (B) 21
(C) 41 (D) 45

Q4. $\frac{d}{dx}(3x^2) =$

- (A) $2x$ (B) $2x + c$
(C) $6x$ (D) none of them

Q5. $\frac{d}{dx}(8b) =$

- (A) 8 (B) b
(C) 1 (D) 0

Q6. What is the probability of an impossible event?

- (A) 1 (B) 0
(C) Insufficient Data (D) none of the above

Q7. $\lim_{x \rightarrow 0} 6x^3 + 17x^2 + 3$

- (A) 26 (B) 0
(C) 3 (D) none of these

Q8. $\int 4dx =$

- (A) $4x + c$ (B) $4 + c$
(C) 0 (D) $x^4 + c$

Q9. What is the range for the following set of numbers?

15, 21, 57, 43, 11, 39, 56, 83, 77, 11, 64, 91, 18, 37

- (A) 22 (B) 72
(C) 80 (D) 91

Q10. What will be the probability of getting odd numbers if a dice is thrown?

(A) $1/2$

(B) 2

(C) $4/2$

(D) $5/2$

Section – B

04X04 = 16 Marks

Q11. Find the power set of the following sets:

(a) $A = \{2, 3, 4\}$

(b) $B = \{a, \{b, c\}, d\}$

Q12. Evaluate $\lim_{x \rightarrow 1/2} \frac{4x^2 - 1}{2x - 1}$

Q13. If $y = (6x^3 - 3e^x)(\sin x + \log x)$, then find $\frac{dy}{dx}$.

Q14. Evaluate $\int \left(\frac{1}{x} + \frac{1}{x^{1/2}} + \frac{1}{x^{3/2}} \right) dx$

Section – C

04X06 = 24 Marks

Q15. (i) Write down the below mentioned sets in set-builder form

(a) $A = \{5, 25, 125, \dots\}$

(b) $B = \{2, 3, 5, 7, 11\}$

(ii) Write down the below mentioned set in roster form:

$C = \{x : x \text{ is a positive integer and } x < 11\}$

Q16. Find the mean of the following data:

x	4	6	9	10	15
f	5	10	10	7	8

Q17. The number of bed-sheets manufactured by a factory during five consecutive weeks is given below.

Week	1 st	2 nd	3 rd	4 th	5 th
Number of Bed-Sheets	600	850	700	300	900

Draw the bar graph representing the above data.

Q18. If we are rolling a fair dice. There are six equally likely outcomes: 1, 2, 3, 4, 5 and 6.

(a) What is the probability of getting a five?

(b) What is the probability of getting an even number?

(c) What is the probability of getting a four or a five?



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Course Code: GEN 1103

Time: 2 Hours

Course Name: Applied Mathematics

Max. Marks: 50

Instruction: 1. Calculator is strictly prohibited.
2. Missing data if any can be suitably assumed.

Section – A

10X01 = 10 Marks

Q1. If $A = \{2, 4, 6, 8, 10\}$ and $B = \{6, 7, 8, 9\}$, then $B - A$ is

- (A) $\{6,7,8,9\}$ (B) $\{7,9\}$
(C) $\{ \}$ (D) $\{2,4,10\}$

Q2. Which of the following number is the prime number?

- (A) 102 (B) 81
(C) 31 (D) 55

Q3. $\frac{d}{dx}(4x^2) =$

- (A) $2x$ (B) $2x + c$
(C) $8x$ (D) none of them

Q4. $\frac{d}{dx}(6b) =$

- (A) 6 (B) b
(C) 1 (D) 0

Q5. $\lim_{x \rightarrow 0} 3x^3 + 18x^2 + 9$

- (A) 30 (B) 0
(C) 9 (D) none of these

Q6. $\int 5dx =$

- (A) $5x + c$ (B) $5 + c$
(C) 0 (D) $x^5 + c$

Q7. What is the range for the following set of numbers?

15, 21, 57, 43, 5, 39, 56, 83, 77, 11, 64, 91, 18, 37

- (A) 22 (B) 5
(C) 86 (D) 91

Q8. Mode is the.....

- (A) middle most frequent value (B) least frequent value
(C) maximum frequent value (D) none of these

Q9. What will be the probability of getting even numbers if a dice is thrown?

- (A) $1/2$ (B) 2
(C) $4/2$ (D) $5/2$

Q10. What is the probability of an impossible event?

- (A) 1 (B) 0
(C) Insufficient Data (D) none of the above

Section – B

04X04 = 16 Marks

Q11. Find the power set of the following sets:

- (a) $A = \{1, 3, 5\}$ (b) $B = \{2, \{3, 4\}, 6\}$

Q12. Evaluate $\lim_{x \rightarrow 2} \frac{x^2 - 3x + 2}{x^2 - 6x + 8}$

Q13. If $y = (7x^4 - ae^x)(\cos x + 45)$, then find $\frac{dy}{dx}$.

Q14. Evaluate $\int \left(\frac{1}{x} + \frac{1}{x^{3/2}} + \frac{1}{x^{5/2}} \right) dx$

Section – C

04X06 = 24 Marks

Q15. If $A = \{a, b, c, d\}$, $B = \{c, d, e, f\}$ and $C = \{e, f, g, h\}$ and universal set $U = \{a, b, c, d, e, f, g, h, i\}$, then find:

- (a) $(A \cup B)' \cap (A \cup C)'$ (c) $A \cup (B \cap C)$
(b) $(A - B)' \cup (A - C)'$

Q16. Find the mean of the following data:

x	1	20	25	30	40	50
f	5	9	8	1	10	7

Q17. The number of students in 7 different classes is given below. Represent this data on the bar graph.

Class	6 th	7 th	8 th	9 th	10 th	11 th	12 th
No. of Students	130	120	135	130	150	80	75

Q18. If we are rolling a fair dice. There are six equally likely outcomes: 1, 2, 3, 4, 5 and 6.

- (a) What is the probability of getting a three?
(b) What is the probability of getting an odd number?
(c) What is the probability of getting a two or a five?

Answer key

Q1 B, Q2 C Q3 C Q4 D Q5 B Q6 A

Q7 C Q8 C Q9 A Q10 B

Q11 (a) $P(A) = \{ \emptyset, \{2\}, \{3\}, \{4\}, \{2,3\}, \{2,4\}, \{3,4\}, \{2,3,4\} \}$

(b) $P(B) = \{ \emptyset, \{a\}, \{b,c\}, \{d\}, \{a,b,c\}, \{a,d\}, \{b,c,d\}, \{a,b,c,d\} \}$

Q12 $\lim_{x \rightarrow 1/2} \frac{4x^2 - 1}{2x - 1} = \lim_{x \rightarrow 1/2} \frac{(2x-1)(2x+1)}{(2x-1)}$
 $= 2 \times \frac{1}{2} + 1 = 2$

Q13 $y = (6x^3 - 3e^x)(\sin x + \log x)$
 $\frac{dy}{dx} = (6x^3 - 3e^x)(\cos x + \frac{1}{x}) + (\sin x + \log x)(18x^2 - 3e^x)$

Q14 $\int (\frac{1}{x} + \frac{1}{x^{1/2}} + \frac{1}{x^{3/2}}) dx$
 $= \log x + \frac{x^{-1/2+1}}{-1/2+1} + \frac{x^{-3/2+1}}{-3/2+1} + C$

Q15 (i) (a) $A = \{ 5^n, n \in \mathbb{N} \}$
 (b) $B = \{ x : x \text{ is prime no. less than } 12 \}$

(ii) $C = \{ 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 \}$

UEN 1103 (B)

Answers Key

Q1 B Q2 C Q3 C Q4 D Q5 C Q6 A
Q7 C Q8 C Q9 A Q10 B

Q11 (a) $P(A) = \{ \emptyset, \{3\}, \{5\}, \{1,3\}, \{1,5\}, \{3,5\}, \{1,3,5\} \}$

(b) $P(B) = \{ \emptyset, \{2,3\}, \{3,4\}, \{6\}, \{2,6\}, \{2,3,4,6\} \}$

Q12 $\lim_{x \rightarrow 2} \frac{(x^2 - 2)(x-1)}{(x-2)(x-4)} = \frac{2-1}{2-4} = \frac{1}{-2} = -1/2$

Q13 $y = (7x^4 - ae^x)(\cos x + 45)$

$$\frac{dy}{dx} = (7x^4 - ae^x)(-\sin x) + (\cos x + 45)(28x^3 - ae^x)$$

Q14 $\int \left(\frac{1}{x} + \frac{1}{x^{3/2}} + \frac{1}{x^{5/2}} \right) dx$

$$= \ln|x| + \frac{x^{-3/2+1}}{-3/2+1} + \frac{x^{-5/2+1}}{-5/2+1} + C$$